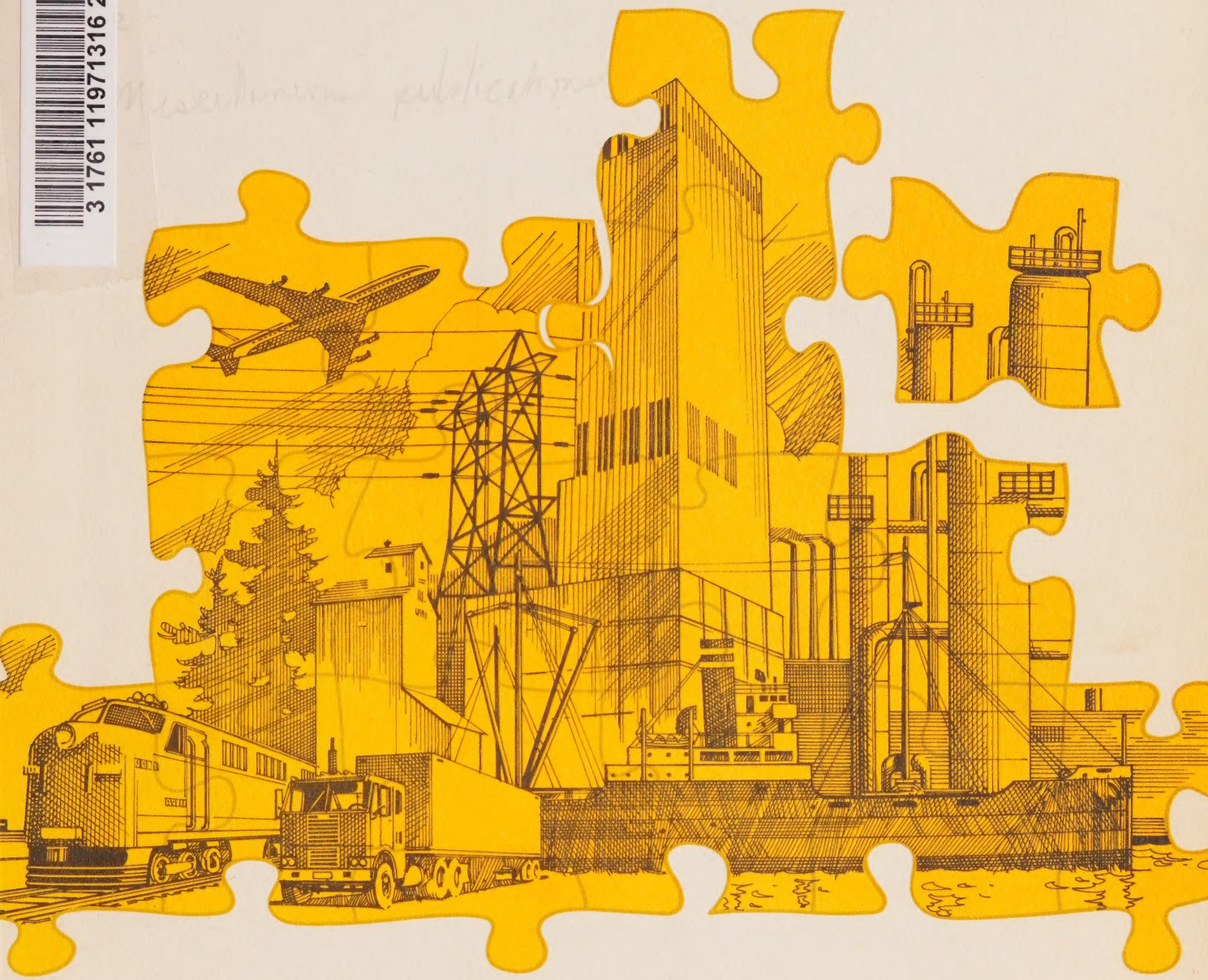
Royal Commission on Corporate Concentration



STUDY NO. 19

Corporate Dualism and the Canadian Steel Industry

A Background Report

Royal Commission on Corporate Concentration

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Corporate Dualism

and

The Canadian Steel Industry

A Background Report

by

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FOREWORD

In April 1975, the Royal Commission on Corporate Concentration was appointed to "inquire into, report upon, and make recommendations concerning:

(a) the nature and role of major concentrations of corporate power in Canada;

(b) the economic and social implications for the public interest of such concentrations; and

(c) whether safeguards exist or may be required to protect the public interest in the presence of such concentrations."

To gather informed opinion, the Commission invited briefs from interested persons and organizations and held hearings across Canada beginning in November 1975. In addition, the Commission organized a number of research projects relevant to its inquiry.

One such project was directed at investigating competitive aspects of small and medium sized firms and their relationship with large and dominant firms, - the so-called corporate dualism phenomenon. This study is one result of the project. The Canadian steel industry is dominated by three very large, dominant, vertically integrated producers, and has a slightly larger number of small and medium sized firms, thus providing a fertile ground for an investigation of a mixed-size industrial sector.

The study of corporate dualism and the steel industry was prepared for the Commission by Isaiah A. Litvak and Christopher J. Maule of Carleton University in Ottawa. Professors Litvak and Maule have previously collaborated on the writing and editing of three books and thirty articles on international business and industrial organization. They are the authors of a second study in the Royal Commission research series, on Alcan Aluminium Limited. Their work was carried out with full cooperation and assistance of the Canadian steel industry, and of individual companies.

The Commission is publishing this and other background studies in the public interest. We emphasize, however, that the analyses presented and conclusions reached are those of the author, and do not necessarily reflect the views of the Commission or its staff.

Donald N. Thompson
Director of Research

PREFACE

The fact that industrialised economies consist of industries in which there are firms of different sizes has received attention in a number of ways. One study concluded that,

> No work has ever been done which would enable us to determine the optimum size distribution of firms in our industrial structure and it is therefore very difficult to say that at any time there are too few or too many small firms.[1]

More recently, attention has been given to this topic in the writings of Professor J.K. Galbraith who argues that the United States economy consists of a planning system populated by large firms and a market system populated by small firms.[2] Different economic forces and outcomes are considered to come from the two systems.

The purpose of this study is to highlight the competitive aspects of small and medium size firms in their relationship to large firms, based on existing literature. These aspects are then illustrated with respect to the Canadian steel industry, an industry which is dominated by three large vertically integrated producers, who coexist alongside a handful of medium and small size steel producers.

This study originated in a background paper on the competitive aspects of corporate dualism, prepared for the Royal Commission on Corporate Concentration. The authors were then asked to convert the paper into a form for publication. As such, it is not claimed

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[1] Report of the Committee of Inquiry on Small Firms (London: HMSO, 1972), p. 342.

[2] J.K. Galbraith, Economics and the Public Purpose (Boston: Houghton, 1973).

to be an exhaustive study of competition in the Canadian steel industry, although it does pull together and analyse material which is available in a variety of places. The information on the Canadian steel industry was obtained from published secondary sources, interviews with government officials, academics and businessmen either in or familiar with the steel industry. While the facts have been verified, as far as possible, by industry officials, the analysis of competition reflects the views of the authors.

We greatly appreciate the assistance given to us by those government and business officials who were interviewed. We would especially like to thank Dr. R. Goodman for his incisive comments on the study, also Messrs. B.P. Newman, S. Taube and R.C. Varah for their comments, and Mrs. N. Rankin for her administrative efficiency in preparing the manuscript for publication.

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COMPETITIVE ASPECTS OF CORPORATE DUALISM

HORIZONTAL COMPETITION

There is a considerable volume of literature on the nature and problems of small firms in industrialised countries, some of which deals with the focus of this study, namely, the competitive relationship between firms of different sizes. At the outset it is useful to consider the relationship in two directions, first horizontal competition between large-medium-small firms, and second, vertical competition between large-medium-small firms. In the first instance, the firms compete against each other in the same product market and can be viewed as competing firms in the tradition of the economic theory of competition and monopoly, while in the second, the firms are in a buyer-seller relationship where the small firm acts as a supplier to or a customer of a larger firm. In both cases, competition can involve price and non-price factors, and the relative competitive strength of the different size firms will depend on factors affecting the cost position of the firms, e.g., cost of labour, materials, components, finance, quality of management and government policies.

Corporate dualism is frequently present in oligopolistic industries which are populated by a few large firms and a fringe of smaller firms. When the presence of the large firms is due to economies of scale at the plant or firm (multiplant) level, the parallel existence of competing smaller firms is usually explained in terms of (a) the regional nature of markets, (b) product differentiation which allows small firms to exist in a corner of the market, (c) innovation which gives the smaller firm an advantage, (d) rapid market growth which allows new small firm entry, (e) absence of competition to drive out small firms,

perhaps deliberate in order to show the presence of competitors to antitrust authorities, and effected through umbrella pricing (maintaining prices high enough to allow smaller less efficient firms to compete), (f) actual unimportance of economies of scale so that a range of firms' sizes are efficient, and (g) government subsidies to industry.

The actual reason for the persistence of small firms alongside large firms will determine the competitive situation for the small firms. For example, if umbrella pricing is the reason, the small firm's existence rests on the pricing policy of the large firms: if innovation is the reason, the small firm's advantage depends on the speed with which the innovation can be copied by the larger firms: if regional markets (geographical segmentation) is the reason, then factors affecting transportation costs will determine the competitive situation of the small firm. This is particularly the case where the small firm has a single product while the larger firm has a diversified product range. In this case, the livelihood of the smaller firm tends to be much more uncertain, and thus subject to disciplinary actions by larger firms in the event that the smaller firms cut prices, which has hurt or has the potential for hurting, the larger firms. Typically, the larger firms have a more diversified product range and sell in a larger geographic market which reduces their vulnerability.[1]

Horizontal competition between large and small firms presents a different range of issues where the large firm is vertically integrated through several stages of production, e.g., mining, refining and fabrication, and the small firm is confined to one stage only, e.g., refining, and competes horizontally at one stage only. In this case, the position of the small firm depends on market conditions at all three stages. If the small firm

refinery can purchase its inputs from the mining stage, and sell its outputs to the fabricating stage in competitive markets, its vulnerability is much less than if it has to purchase inputs from the large integrated producer's mining stage, and/or sell its output to the large integrated producer's fabricating stage. The latter situation is one where the smaller firm tends to survive at the will of the larger firm.

There is ample evidence of large firms acting as suppliers to competing small firms and determining the profitability of the small firms. A typical squeeze situation exists where the large firm determines the major cost element of the small firm and sets a price in the market for the product of the small firm which leaves a small margin of profit. Slight pricing changes for inputs or outputs can often eliminate any profits that exist, and the small firms know this. The issue often comes down to a question of whether price discrimination exists, i.e., can it be shown that the integrated firm is supplying itself with inputs at an internally set transfer price, which is lower than the price being charged to the small firm, and where the price differential cannot be justified on the basis of a cost differential. The actual determination of what the price differential should be for the two transactions is something that is often hard to do. This last example in fact incorporates both horizontal and vertical competitive aspects because the small firm is identified as a supplier, customer and horizontal competitor of the larger firm.

VERTICAL COMPETITION

A clear case of vertical competition exists when a small firm acts as a supplier to or a customer of a large firm. Small firms in this situation have been described as satellites of large firms, and really represents, for the large firm, an alternative to integrating backwards or forwards. Where a small firm has a long term contract for the supply or output of a large firm, the difference between the small firm as an independent entity and as a division of a large firm becomes marginal, since the small firm is being used as a division. How to define the boundary of a firm under different contractual arrangements raises an interesting question.

The reasons why a large firm would use a small firm as a supplier or customer include (a) to transfer risk, (b) increase flexibility of operations especially where fixed costs are significant and there is need to adjust to changes in capacity utilization (i.e., a large firm may provide some of its own inputs and buy additional requirements), (c) reduce the outlay of capital, (d) avoid employee fringe benefit problems, and (e) avoid attention from antitrust authorities. While some of these reasons imply disadvantages for the small firm suppliers, it is also clear that the large firm will be dependent on the small firm in different degrees. However, the competitive vulnerability of the small firm is almost always greater, especially if it is a single product firm and has few alternative customers or suppliers other than the large firm. Market foreclosure then becomes a real threat if the large firm refuses to buy from or supply the small firm. Averitt draws a distinction between floating and attached satellites according to whether the small firm has alternatives to its relationship with the large firm. Another competitive strength of the larger firm is that it can

integrate, or it can threaten to integrate, backwards or forwards into the industry in which the small firm resides. This tactic was used by the chain stores to counteract legislation which favoured the operations of small firms in the United States.

Various kinds of competitive conduct are often experienced in situations involving large and small firms:[2] (a) resale price maintenance, whereby small firm distributors price maintain the goods of large manufacturers,[3] (b) price discrimination, mentioned above, (c) exclusive dealing, whereby a small firm distributor is required to handle the products of one supplier only and forecloses its outlets to other suppliers, (d) requirements contracts, whereby a distributor agrees to buy all its requirements of a particular good from one supplier, (e) full line forcing, whereby a distributor agrees to handle the full line of one supplier, (f) tied sales, whereby a distributor agrees to buy product B as well as product A, (g) exclusive franchising, whereby a distributor is given exclusive supply of a particular item(s) in a particular area, (h) reciprocal dealing, whereby a small firm sells to a large firm on condition it buys some needed item from the large firm. The foregoing examples of conduct are ones which are not unique to large firm - small firm transactions, but frequently do occur. Their economic consequences for competition vary depending on other aspects of the market, but in general involve some aspect of market foreclosure. Nor are their consequences only economic.

> Any discussion of equity moves rapidly from an economic to what is essentially a political view, since equity is ultimately a value problem whose social resolution is of the essence of politics. When we make this move, a new order of equity problems connected with the power of the large firm appears. This is the problem of the relation between the large enterprise and

> the host of small satellite enterprises which become its dependents. These may be customers bound to it by a variety of contractual relations, such as the service stations bound to the major oil companies who are their suppliers (and frequently their landlords and bankers as well), or the automobile dealers connected with the manufacturers by franchise arrangements. Or they may be customers without explicit contractual ties, yet nonetheless dependent on the maintenance of "customary" relations with large suppliers of their essential raw material, as has been the case with small fabricators of aluminum and steel products, whose business destinies have been controlled by the informal rationing schemes of the primary producers in the frequent shortage periods of the postwar decade. Or they may be small suppliers of large firms: canners packing for the private brands of the large chain grocers, furniture or clothing manufacturers producing for the chain department stores and mailorder houses, subcontractors producing for the major military suppliers. In any case, these small firms are typically wholly dependent on their larger partners. It is worth noting that this dependence may be consistent with a fairly competitive situation in the major product market of the large purchaser, or even the over-all selling market of the large supplier, provided the particular submarket in which the transactions between large and small firm occur is segmented enough to make it costly and risky for the small firm to seek new sources or outlets.[4]

In the mining industry, a further issue involves the impact of tolling agreements. For many raw materials, the number of small independent mines exceeds the number of independent smelter-refiners, which often are of large size. Consequently, the mines either sell their ore to the smelter-refiners or contract with the smelter-refiners to process (custom smelt-refine) their ore and perhaps to sell the refined metal through the smelter-refiner's sales organization. In the latter case the mine may retain title to the metal until it is finally sold. An

alternative for the small mine owner is to contract to sell the ore on a long term or short term basis. In either event, the mine owner is a satellite small supplier to the large firm, and depending on the terms of the sales contract or tolling agreement becomes, in effect, a part of the large firm, thus blurring the boundary of the firm.

In sum, the competitive position of the small firm in a horizontal or vertical relation to the large firm tends to be one of dependency and vulnerability. Obviously, there can be exceptions as in the case of the small firm which is a regional monopoly protected by high transportation costs, where the firm has some characteristics which are difficult to duplicate, or where there are government-owned firms. However, the general tendency of dependency and vulnerability is reinforced by certain characteristics often found in small firms.

ECONOMIC ISSUES - SMALL FIRMS

The literature on small firms and dualism identifies a number of issues which relate to the competitive strengths and weaknesses of small firms.[5] These issues include small firm dependency, the role of government, managerial succession, unequal development, the impact of unions, and conditions of entry and exit.

DEPENDENCY

In a dual economy populated by small, medium and large firms, the different sized firms will exist in various kinds of relationship with each other. Typically, the small firm may act as a supplier to or a customer of a larger firm, which is a vertical relationship, or may compete horizontally with larger

firms. The vertical relationship implies interdependency between large and small, with the small firm often being on the dependent end of the transaction. The degree of dependency will depend on a number of economic factors as well as on the nature of the contractual arrangement between buyer and seller. As a supplier to a large firm, the small firm is highly dependent where the large firm is the only buyer and limits the small firm from expanding its markets. Pressure to do this can be exerted in a number of ways. The large firm can supply technical assistance and product development assistance to the small firm, financial backing through loans or trade credit, enter into long term contracts to buy providing the small firm does not diversify its markets, lease or rent equipment to the small firm, or threaten to refuse to buy once the small firm has adapted itself to the large firm's requirements. These pressures need not be overwhelming where the small firm has alternatives to exercise, as in the case of alternative markets, financing and technical assistance, or where the small firm controls through a patent the technology required by the large firm. As a customer of a large firm, similar considerations apply and dependency results from the strength of the need which the small and large firms have for each other.

In a horizontal relationship, the dependency of the small firm rests much more on whether the large firm allows the small firm to exist when it could drive it out of business but decides not to. The strength of the small firm in this situation depends on whether the small firm produces an identical product to the large firm, or whether it can differentiate its product or service in such a way as to give itself a measure of independence. A small firm promotes its own independence where it develops a new product or process which cannot be easily copied, where it can provide personalized service, when it operates in an area

where economies of scale are not important, where the market is small, transportation costs are high and no overwhelming multi-plant economies of scale occur, and where adequate sources of finance are available.

It should be noted that the dependency relationship is not all one way, since there are advantages to large firms in perpetuating the existence of small firms. For example, small firm suppliers are viewed as providing the large firm with a flexible source of supply that does not tie up capital, and which can be used to reduce or transfer risks of market fluctuations.

The contractual arrangement in a vertical relationship is important. A small firm acting as a franchise outlet for a large firm is often closely tied to the large firm, as is any small firm which has a long term contract to sell to or buy from a large firm. It is often the case that conditions, tied to the franchise or long term contract, determine the small firm's degree of dependency, and these can only be appreciated by reading the detailed terms of the agreements.

ROLE OF GOVERNMENT

Government policy affects different sized firms in so many ways that the net impact on a particular size of firm is difficult to assess. An important underlying consideration is that all industrialised economies are facing growing government involvement in the economy in general and in industry in particular. Two approaches taken are, first, the government organises the means of production itself, as in the case of nationalised industries in the U.K., and second, the government influences private enterprise to conform with government objectives through incentives, penalties and regulation, as in the case of Sweden

and the U.S. Where some form of national planning is used, as in France, there is a definite bias towards large firms in that the planners would prefer to deal with a few firms that control most of an industry's output, rather than a large number of firms which complicate the administrative procedures. Similar considerations apply in the case of subsidies and regulations. It is a great deal easier administratively if there are a small number of large firms to handle. In the case of subsidies there also tends to be a predisposition to favour larger firms since these usually have an established track record.

Other government policies tend to favour small firms, e.g., directed government purchases from small firms, special financial aid to small firms, and taxes favouring small firms. Policies promoting regional economic expansion may benefit small firms because these may be the firms which will consider going to a depressed region. On the other hand, both the administrative preference for dealing with larger firms, and the time required to make applications for subsidies and grants tends to favour the larger firms.

Antitrust laws can work in favour of different sized firms. For example, prohibition of agreements, a permissive approach towards mergers, and reluctance to dissolve large firms favour firms which are already large and those which become large through merger, and works against small firms which wish to enter rationalization and specialization agreements, which might allow them to compete on a par with larger firms.

Small firms are noted as being more vulnerable to economic fluctuations than larger firms. Consequently a government's stabilization and commercial policy will influence the small firm's position. Two aspects are important, first, the extent

to which the timing of stabilization policy acts to iron out the fluctuations, and second, the extent to which the type of policy impacts on small firms. For example, if monetary policy is tightened, do small firms have access to adequate sources of financing, or do the financial institutions favour the larger firms?

OTHER ISSUES

Other issues stressed in the literature are the questions of management and managerial succession in small firms. Typically, a small firm goes through a number of evolutionary stages which may lead to firm growth, firm death or persistence of small scale operation. One critical ingredient in these stages and in the direction which the firm takes is the management input. As a firm develops, it requires a range of management inputs, e.g., finance, marketing, production, labour relations, which vary in importance over time. If the founding owner-manager has strength in one managerial area, he has to complement this with the other inputs, and alter the organizational structure and administrative procedures as the firm develops. Frequently, failure to develop occurs because of management's failure to make these changes. A critical time tends to occur when the original owner-manager has to retire and he has failed to make provision for managerial succession. One alternative is to sell the firm to another firm, but the owner-manager may find that the value of the firm's assets lies in his presence as the manager of those assets, so that the net worth of the firm with him as its manager is vastly greater than when he tries to sell it to some third party.

The performance of small firms is difficult to evaluate because the economic activities must be viewed as consumption activities as well as production activities. In the past,

studies have emphasized the production side, i.e., the efficiency with which the small firm converts inputs into outputs which can be marketed, and the associated earning of a reasonable return on capital. A modified approach must be concerned not only with these activities, but with the way in which expenditure and behaviour in the small firm represents the interests or hobby of the individual who is running the firm. What may appear to be inefficient behaviour in a production sense may represent inefficiency, but may also represent behaviour by the individual to pursue his hobby. An individual may be willing to spend money or earn a low rate of return on his capital, if he obtains satisfaction from pursuing his personal interests within the framework of a small firm. If it is the characteristic of owner-management that leads to this result, then medium and large-size owner-managed firms may perform in a similar manner.

In economic theory, the firm is viewed as a production unit which, with rational behaviour (profit maximization) on the part of the decision-makers, will engage in efficient production, i.e., producing any given level of output at a point on its average cost curve. The idea suggested here is that a firm may be deliberately inefficient by making expenditures which cause production to take place at a point above its known average cost curve, because these expenditures satisfy the hobby-interests of the decision-maker. In addition, financial performance of the small firm may be disguised by the extent to which personal expenses of the owner can be treated as a pre-tax business expense.

The unequal development of the large firm and small firm sectors has been identified as one of the main problems of industrialised economies. The inequality may arise from natural economic forces or government action; the results give rise to economic instability, a waste of resources, lower rewards to the

factors of production in the small firm sector, and unsatisfactory provision of goods and services from this sector.

Labour unions may also have a different impact on firms of different sizes. For example the wages and fringe benefits earned by unions in their negotiations with large firms may spill over or provide a demonstration effect to the labour employed by small firms. An offsetting factor here is that small firms may be able to locate in areas where labour is weak, e.g., depressed areas, and to resist the impact of powerful unions. This will depend on a number of factors including the ease of entry and of exit of firms from an industry or region. Many service sector operations tend to be small and allow for ease of entry and exit: part of the construction industry also has these characteristics.

Entry and exit conditions can also provide firms with a competitive advantage not considered desirable. Although many of the well publicised cases of graft, corruption, negligence and malfunctioning products relate to large firms, much of this activity is associated with small firms for two reasons. First, where entry and exit is easy, a small firm can establish itself, perpetrate its fraud and exit the market, perhaps to re-establish in another locality. And second, a small firm may not have the investment in goodwill or reputation, and thus is not worried by bad publicity associated with fraudulent behaviour. Repair services, small scale construction, and mail-order businesses are known examples of this activity.[6]

In sum, the competitive strengths and weaknesses of a small firm can be examined in the light of a number of external and internal factors. Externally the factors include the legal and policy environment and the market circumstances, while internally they include the managerial and financial characteristics of the firm (the latter may result from conditions in the external capital market).

SOME EXAMPLES

Aluminum wire and cable is produced from aluminum ingot which has been converted into aluminum rod. Until the mid-1960s, Alcan had the only rod-producing plants in Canada which produced rod for use in Alcan wire and cable plants and in the plants of independent wire and cable producers. Later, Reynolds built a rod mill and there were then two rod producers in Canada, Alcan and Reynolds, both of which also produced wire and cable, and a number of independent wire and cable producers. The problem for the independent producers was that they were purchasing rod from the same firms with which they had to compete in the wire and cable market. Consequently, the rod producers could put the independent producers in a 'profit squeeze' by establishing a price for wire and cable and a price for aluminum rod, the principal cost factor for the independents.

Industrial Wire and Cable, one of the larger independents, claimed in an enquiry under the Combines Investigation Act that its competitive position and opportunities for growth were limited by the way in which the rod producers set rod and cable prices. Wire and cable sales in the export market were a particular issue. The rod producers were alleged to price exports at lower than domestic sales, thus in order to compete in export markets it was necessary for independents to pay lower prices for rod that was destined for export. The rod producers resisted giving such discounts unless proof of the export order was shown, being unwilling to accept that their sales organizations were likely to miss any significant export sales, and fearful that lower cost rod might reappear as lower price wire and cable in the domestic market.

In sum, this case situation illustrates the typical position in which a non-integrated producer finds itself when competing at one stage with an integrated producer who is also a supplier

to the non-integrated producer. The position of the non-integrated producer is improved if there are alternative sources of supply either domestic or foreign (imports). In the example given, there were only two domestic rod producers, and the international industry is oligopolistic with informal ways in which imports can be restricted, and thus horizontal competition from the small independent producers is weak.

The A&P case provides illustrations of vertical and horizontal competition between large and small firms. In 1946, the A&P Company was convicted in the United States on charges of conspiracy to monopolize the retail grocery market as a result of conduct which included refusal to purchase from suppliers who would not provide preferential discounts, threats to integrate backwards to compete with arm's length suppliers, and lower retail prices in markets where it faced strong competition while keeping higher prices where competition was weaker. In addition, a produce brokerage subsidiary of A&P was accused of buying produce and selling it to A&P, on a preferential basis relative to the broker's sales to A&P's retail customers. There is widespread disagreement as to whether these actions reflected vigorous competition or monopolizing practices, but the competitive vulnerability of the smaller firms, who were suppliers to, customers of, and competitive with, A&P is clearly shown.[7]

The topic of price discrimination has dealt extensively with the position of small firms relative to larger competing firms and in relation to suppliers selling to both large and small firms. The pressure for the inclusion of price discrimination as a possible offense in competition policy arose from the complaints of small firms that they had to purchase supplies at prices higher than those available to larger firms, where the actual realised price was the result of firms receiving different

discounts or promotional allowances. An examination of price discrimination in the grocery trade in Canada concluded that while price differentials did exist between different buyers of the same product, this "would not necessarily mean that it would be criticized from an economic point of view" which would have to include a wider range of economic factors.[8] General economic condemnation has been levelled at predatory pricing, or price discrimination undertaken with the intent to drive competitors out of a market, establish a monopoly position and later raise prices. This type of situation is well documented in the case of the Eddy Match Co. and its use of fighting brands, market loading, and dealer contracts in order to drive out small match-producing firms.[9] The company was convicted on a charge of monopoly.

A further example of vertical competition between large and small firms exists in the contractual agreements between service stations and oil companies. Four classes of service stations have been identified:

(a) Company owned and operated: this class includes stations which are the property of the supplying oil company, or leased by it and operated by the oil company, with the operator being an employee of the company.

(b) Lessee operated: this class includes stations owned or leased by the supplying oil company but leased by it to lessee dealers. These dealers frequently must provide some capital investment in the enterprise.

(c) Financially assisted: this class includes stations to whose operators the supplying oil company has extended direct financial assistance, secured by mortgage or otherwise.

(d) Independent brand stations: this class includes stations whose operators either own the stations or lease them from third parties and which stations dispense and display the brand products of the supplying oil companies. These products are

> usually purchased under some form of retail dealer agreement signed with the oil company. In a majority of instances the dispensing equipment is obtained under an equipment loan or conditional sale agreement from the oil company, on condition it is used to dispense only the supplying oil company's products.[10]

The difference between the types of service station occur in terms of the contract between the oil company and the service station operator, for example re title to ownership, financial obligation, requirement to handle oil company's products and pricing of products. In the case of a company-owned and operated station, the operator is part of a vertically integrated oil company and he has no independence of action. Moving through types (b) and (c) to Independent brand stations, operator independence increases, but in most instances the supplying oil company manages to negotiate some contract which constrains the independence of the operator, for example full line forcing or a requirements contract. The small so-called independent service station operator tends to end up in a situation of dependence on the larger oil company, and the force of vertical competition is reduced with the seller (oil company) dictating the terms. In fact, this example illustrates the difficulty of defining the boundary of the firm (or the corporation). All intrafirm transactions take place within a firm, i.e., between an oil company and a company-owned and operated station; and all interfirm, arm's length transactions take place between firms. However, contractual arrangements superimposed on otherwise arm's length agreements can create a dependency relation, which makes the independent firm an offshoot of the supplying oil company, with similarities to the position of the company-owned and operated service station. As in the previous example, the implications of these arrangements for the force and nature of vertical competition

on the part of the small firm will depend on the alternative sources of supply which are available.

The practice of resale price maintenance can be enforced by a large supplier on a number of small retail outlets. In this instance, refusal to supply is often used by the supplier to discipline the retailers, with implications for vertical competition and the elimination of horizontal price competition between the retailers. The use of delivered pricing systems, as in the case of the Pittsburgh Plus basing-point system for pricing steel in the U.S. is one in which the price terms of a contract between a steel producer and steel buyer is fixed, thus affecting vertical competition and the cost position of competing steel users. For example, steel users located away from Pittsburgh were at a cost disadvantage because they had to pay the Pittsburgh mill price of steel plus the transportation costs from Pittsburgh to their plants even if they purchased steel from a steel mill in their home town and not from a mill in Pittsburgh.

CANADIAN DATA ON CORPORATE DUALISM

The data on corporate dualism in Canada are published in a wide range of publications, and it is difficult to draw consistent comparisons between them. A principal difficulty relates to the fact that the legal forms of doing business, the corporation, partnership and sole proprietorship, do not coincide with the organisational-administrative forms such as the establishment, plant and division. Thus, there are a formidable number of organisational terms used, which in addition to the above include concern, enterprise (consolidated and unconsolidated); corporate grouping, holding company, wholly-owned subsidiary, partially-

owned subsidiary, branch plant and joint-venture.

The main sources of overall corporate data are found in the following Statistics Canada publications: Corporation Financial Statistics (No. 61-207), Corporation Taxation Statistics (No. 61-208), Corporations and Labour Unions Returns Act (No. 61-210), General Review of Manufacturing (No. 31-203), Industrial Organisation and Concentration in Manufacturing (No. 31-514). A major need now exists to refine the quality of the data in these reports, to make them more current, and to show how the contents of the reports can be made consistent with each other.

In 1971, there were 231,536 corporations in Canada which filed an income tax return: of these, 78,688 were financial and 152,848 were non-financial corporations. The asset-size distribution of the non-financial corporations was as follows:

Asset Size Class	% of Corporations	% of Assets
$250,000	77.0) --	13.8
$250,000 - $1M	16.2)	
$1M - $5M	5.2) --	23.3
$5M - $25M	1.2)	
$25M - $100M	0.3) --	62.9
$100M +	0.1)	
	100.0	100.0

Thus, the smallest corporations are 93.2% of the total and have 13.8% of the assets, while the largest corporations are 0.4% of the total and have 62.9% of the assets.

Except for 'metal mining' and 'manufacturing', all major industry groups have more than 75% of their corporations in the smallest asset size class (less than $250,000): the 'construction' and 'service' sectors have in excess of 80% of their corporations in this size class. The 142,490 small corporations (assets less than $1M) have 13.8% of all corporate assets, but account for

31% of salaries and wages paid in all industry groups. There are thus a large number of workers associated with small corporations whose livelihood depends on owner-managers who work with very little capital, whether measured in terms of assets, equity or debt when compared to the large corporations.

At the other extreme there are only 624 corporations with assets in excess of $25 million, 280 of which are in the 'manufacturing' sector. The managements of these 624 large corporations are critical in terms of corporate economic performance in Canada, since they account for not only 62.9% of all (non-financial) corporate assets, but 40% of all sales, 37% of all wages and salaries, 50% of all taxes, and 76% of all dividends.

2

CORPORATE DUALISM IN THE CANADIAN STEEL INDUSTRY

THE CANADIAN STEEL INDUSTRY

The raw steel capacity of the Canadian steel industry was 19.1 million tons in 1976, divided between the firms and regions shown in Table 1. There are three size groupings of firms: the largest consists of Stelco, Algoma and Dofasco with 72.7% of industry capacity; the intermediate group contains three firms involving Provincial Government participation, Sysco, Sidbec and Ipsco with 13.8% of capacity; and six firms are identified in the small grouping with 8.4% capacity. In total, these three groups account for 95% of total industry capacity. The industry (based on these twelve firms) is located 80% in Ontario, 8% in Quebec, 5% in Nova Scotia and 7% in the Western Provinces. In 1973, imports accounted for 20.1% of apparent Canadian steel consumption (production + imports - exports) and exports for 15% of production. There were approximately 50,000 persons employed in the industry.

The production process for making steel and the characteristics of vertical integration are critical in understanding the nature of the competition between the firms--see Exhibit 1. The first stage in the steel-making process is the production of pig iron (hot metal) in blast furnaces. Pig iron is produced by the smelting (reduction) of iron ores in the presence of coke and limestone. The three essential raw material inputs are extracted by open-pit or underground mining techniques; the iron ore must be frequently upgraded and often converted into pellets or sinter to produce an optimum product for blast furnace feed; the coal is converted to coke in ovens; and the limestone is crushed and sized. In conventional steel making the hot metal (pig iron) is

TABLE 1

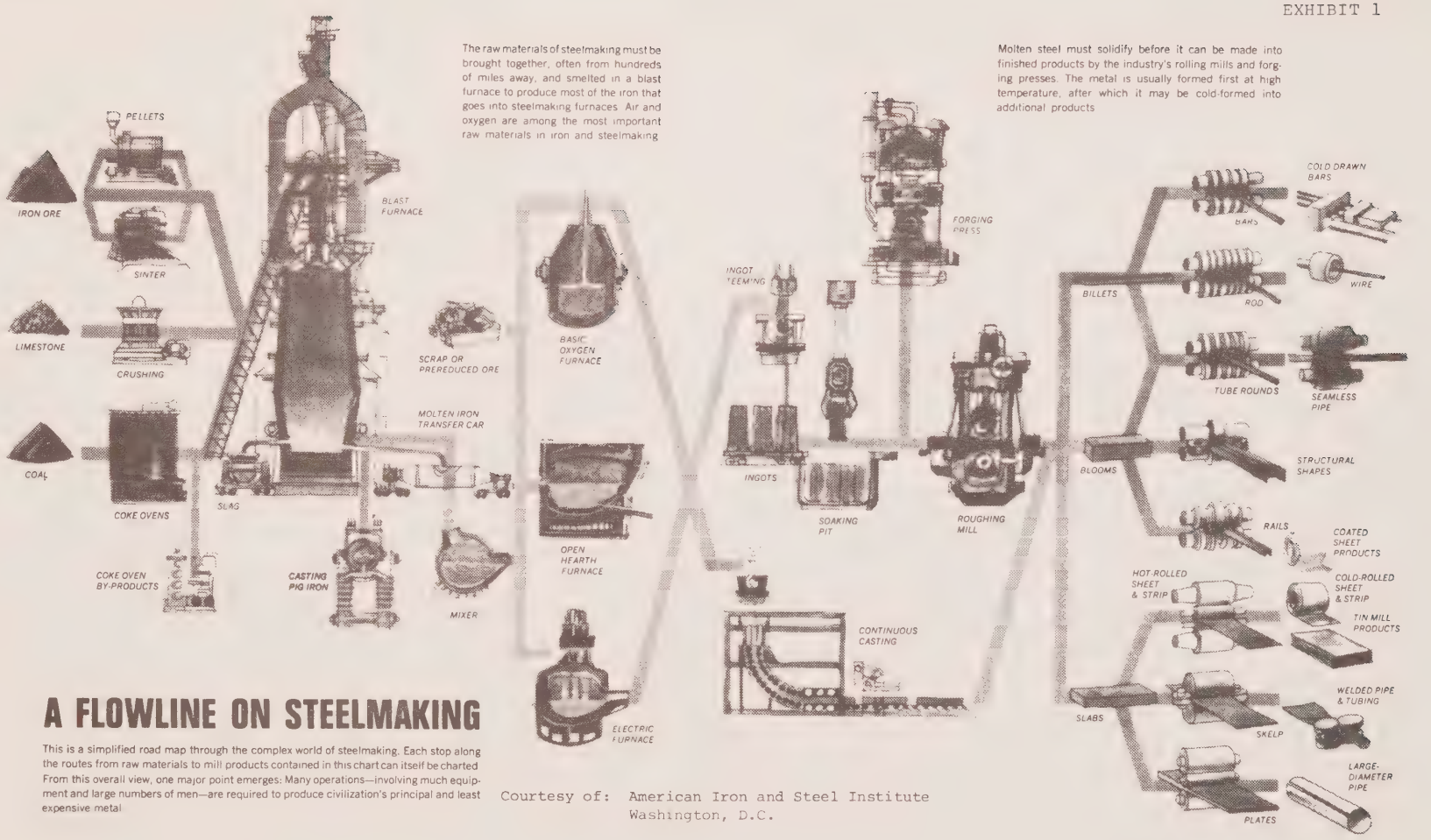
CANADA: STEEL CAPACITY, BY FIRMS AND REGIONS, 1976

(000 tons)

	N.S.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total	%	Cumulative %
1. Steel Co. of Canada Ltd. (Stelco)		215	5800			300		6315	33.0	33.0
2. Algoma Steel Corp. Ltd. (Algoma)			4266					4266	22.3	55.3
3. Dominion Foundries and Steel Ltd. (Dofasco)			3325					3325	17.4	72.7
4. Sydney Steel Corp. (Sysco)	1055							1055	5.5	78.2
5. Sidbec-Dosco Ltd. (Sidbec)		1000						1000	5.2	83.4
6. Interprovincial Steel and Pipe Corp.(Ipsco)					600			600	3.1	86.5
7. Lake Ontario Steel Co. Ltd. (Lasco)			400					400	2.1	88.6
8. Burlington Steel			300					300	1.6	90.2
9. Atlas Steels		84	200					284	1.5	91.7
10. Western Canada Steel						60	210	270	1.4	93.1
11. Quebec Steel Products		200						200	1.0	94.1
12. Manitoba Rolling Mills				160				160	0.8	94.9
Total	1055	1499	14291	160	600	360	210	18175	94.9	
Other								961	5.1	
CANADA TOTAL								19136	100.0	

Note: The companies note problems in comparing effective or useable capacity between firms in any one year.

Source: Statistics Canada, No. 41-001, Feb. 1976, pp. 28 and 29.



A FLOWLINE ON STEELMAKING

The raw materials of steelmaking must be brought together, often from hundreds of miles away, and smelted in a blast furnace to produce most of the iron that goes into steelmaking furnaces. Air and oxygen are among the most important raw materials in iron and steelmaking.

Molten steel must solidify before it can be made into finished products by the industry's rolling mills and forging presses. The metal is usually formed first at high temperature, after which it may be cold-formed into additional products.

This is a simplified road map through the complex world of steelmaking. Each stop along the routes from raw materials to mill products contained in this chart can itself be charted. From this overall view, one major point emerges: Many operations—involving much equipment and large numbers of men—are required to produce civilization's principal and least expensive metal.

Courtesy of: American Iron and Steel Institute
Washington, D.C.

then mixed with scrap and refined to steel in either the open-hearth furnace (OHF) or the basic oxygen furnace (BOF). An alternative steel-making technique is the in situ refining of an all-scrap (with or without sponge iron[1]) charge in electric arc furnaces (EF). Currently in Canada, 54% of crude steel production is carried out in BOFs, 25% in OHFs and 21% in EFs.

The molten steel is "teemed" (poured) into ingot moulds and then converted into three basic semi-finished shapes (semis), namely blooms, slabs and billets. Alternatively, the molten steel may be continuously cast, a technique being used increasingly to by-pass the ingot stage, for direct production of semis. Semis are converted to a variety of steel shapes and forms in rolling mills. The rolling mills involve mainly the application of pressure and cutting of the semis to produce rolled steel products, which fall into the following major categories: bar products, wire rod, heavy and light structural shapes, rails and track material, plate, skelp (plate used to make pipes and tubes), hot and cold rolled sheet and strip. Galvanized steel, tin plate, and precoated steel is cold rolled sheet steel to which special finishes have been applied. The foregoing are the principal primary steel products sold by firms in the steel industry. Plate is used primarily in construction, in the manufacture of pipes and tubes, in the manufacture of heavy equipment such as railway cars and locomotives, and in shipbuilding. Hot rolled sheet is used to manufacture pipe and tube (sheet skelp) and in the manufacture of automobiles, agricultural machinery and equipment, and drums and kegs. Hot rolled sheet is further rolled into cold rolled sheet and strip and used in the manufacture of galvanized steel, tin plate and coated products.[2]

Besides size differences, the companies differ from each other in that they tend to produce a different range of primary

steel products and they possess different degrees of vertical integration, in part related to the production process used. The three largest firms control their own requirements of iron ore, coal and limestone, while the electric furnace producers have to purchase scrap metal on the open market, or have access to sponge iron. In 1975, direct reduction capacity to produce sponge iron in Canada was owned entirely by Stelco and Sidbec-Dosco. Iron ore mines are owned individually by Canadian steel firms, and jointly with other steel firms in Canada, United States and Europe.[3]

THE INTEGRATED PRODUCERS

The three largest vertically integrated steel producers are Stelco, Algoma and Dofasco. Together they account for about 73% of Canada's raw steel capacity. In terms of 1975 sales, the performance of the three companies was as follows: Stelco, $1.2 billion; Algoma (net sales), $0.5 billion; and Dofasco, $0.7 billion. Stelco, the largest of the three vertically integrated steel producers, ranked in 1974 as the 15th largest Canadian company in the Financial Post list of the 100 largest manufacturing, resource and utility companies in Canada. Stelco's share of the domestic steel market was 30.4% in 1974.

The headquarters' organization of the three companies, the bulk of their capital investment, and the major concentration of their customers is in Ontario. Stelco's head office is in Toronto, and in 1975 it had 21 plants situated in Ontario, Quebec, Saskatchewan and Alberta. Algoma's head office and its principal and supporting plants are largely located in Sault Ste. Marie, Ontario. Dofasco repeats this pattern of geographic concentration of manufacturing and head office activity, with its location in the city of Hamilton.

CORPORATE INTEGRATION

Vertical and horizontal integration and the expansion of existing capacity by the "big three" producers have characterized the process of concentration in the Canadian steel industry. An interesting corporate feature of the origin of each of the major producers is that they are an outgrowth of mergers of smaller companies. The key distinguishing feature of the three major steel producers is their degree of vertical integration, especially "up-stream" into iron ore, coking coal and limestone.

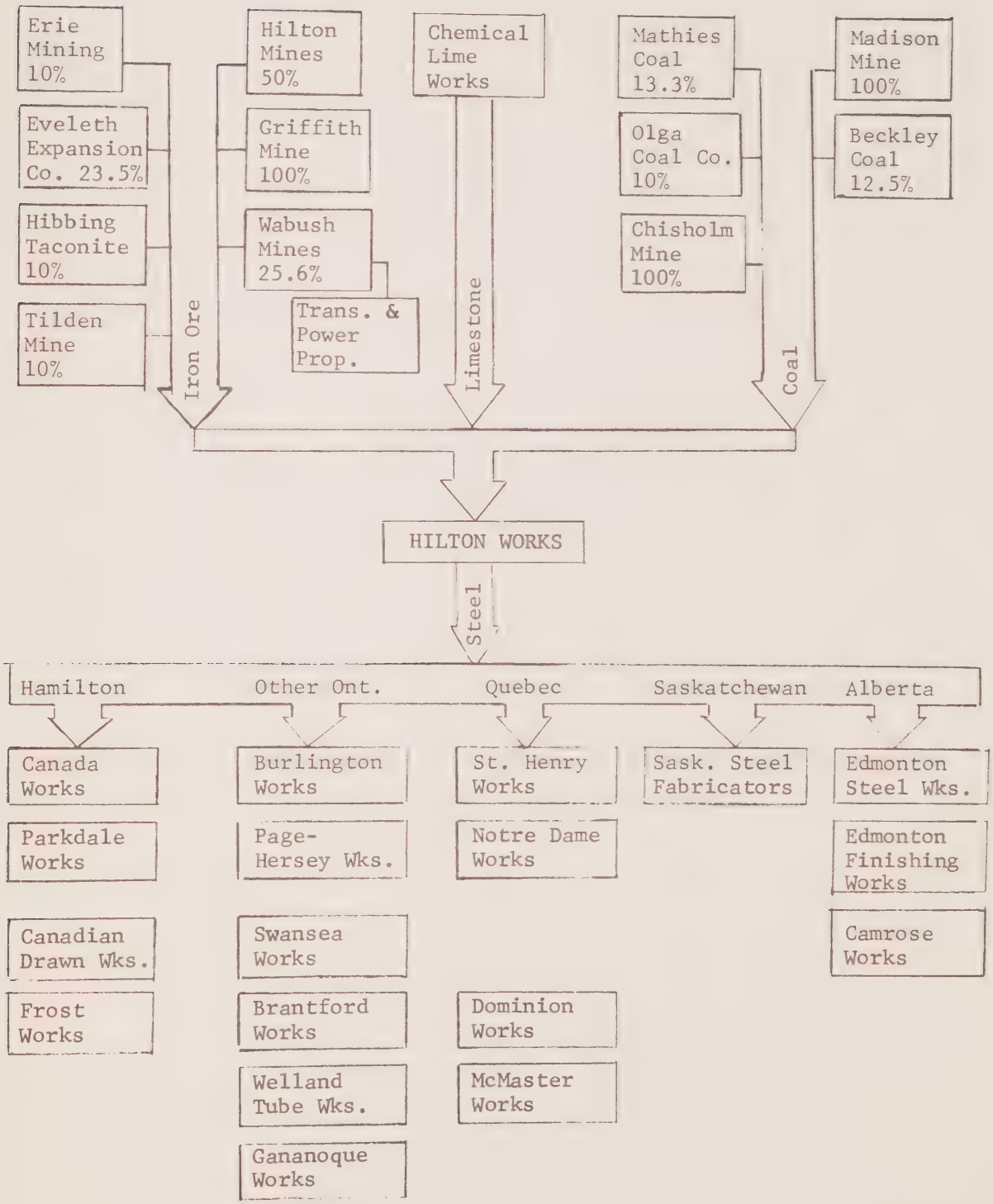
Stelco is largely self-sufficient with respect to its raw material requirements. It owns substantial interests in iron ore, coal and limestone properties. The company obtains virtually all of its iron ore, all its limestone and over half (60%) of its coal requirements from properties in which it has ownership interests. Stelco's major raw materials purchases include coal, tin, zinc and steel scrap. Exhibit 2 provides a schematic presentation of Stelco's principal "up-stream" properties and operations, as well as listing its steel plants in Canada.

Algoma, like Stelco, is largely self-sufficient with respect to its key raw material requirements of iron ore, coal and limestone. Approximately 85% of its iron ore requirements is obtained from company owned or leased properties; about 100% of its coal needs are met through a wholly-owned subsidiary, Cannelton Industries, Inc.; and almost all of its limestone requirements are realized from its operation in Michigan from Fiborn Limestone Company.

To-date, Dofasco is not as vertically integrated as its two major competitors. This is particularly so in the case of coal. Approximately 18% of Dofasco's metallurgical coal requirements is obtained from Ittmann Coal Company in which the company has a 9% ownership interest. The remaining requirements are obtained on

EXHIBIT 2

STEEL COMPANY OF CANADA PRINCIPAL OPERATIONS



an arm's length basis from suppliers under contractual and other long-standing supply arrangements, particularly with Eastern Associated Coal Corporation (U.S.). This situation of dependence, however, appears to be changing. Management is investigating coal properties in Western Canada and the U.S. with a view to securing the additional sources required for future operations. As for iron ore and limestone, Dofasco is almost self-sufficient. It obtains about 94% of its iron ore requirements from properties in which it has ownership interests. Limestone supplies are received from Beachvilime Limited, a wholly-owned subsidiary, based in Beachville, Ontario, a company acquired by Dofasco in 1973 from Cyanamid of Canada, Limited.

Of the three integrated producers, Algoma appears to be the most dependent on its U.S. properties for its major sources of raw material supply--iron ore, coal and limestone. For example, in the case of coking coal supplies, Cannelton Industries, a wholly-owned Algoma subsidiary, is U.S. based and its coal mines are all situated in West Virginia. While Algoma's policy is to develop captive mines, unlike Dofasco and Stelco, it is not actively looking at Canadian sources. Tables 2, 3, 4 and Exhibit 3 list the corporate details of the iron ore and coal mine arrangements involving Stelco, Algoma and Dofasco.

TABLE 2

STEEL COMPANY OF CANADA, LIMITED (STELCO), IRON ORE SUPPLY

Company or Mine and Location	Stelco Ownership	Annual Production Capacity	Approximate Annual Delivery to Stelco	Total Mine & Plant Capital Investment	Capital Cost per Annual Ton	Completion Date of Construction
1973	%	(Millions of Metric Tons)		$ millions	$/metric ton	
The Griffith Mine, Bruce Lake, Ontario	100	1.5	1.5	75.9*	41.33	1968
Wabush Mines, Wabush, Labrador	25.6	6.2	1.5	305*	38.71	1965
The Hilton Mines, Shawville, Quebec	50.0	0.95	0.45	17.7*	21.05	1958
Erie Mining Co., Minnesota	10.0	10.5	1.05	438	41.71	-
		TOTAL	4.50			
Tilden Mine, Michigan	10	4.1	0.5	221*	48.78	1974
Eveleth Expansion, Minnesota	23.5*	3.6*	1.0	292*	28.85	1976
Hibbing Taconite Co., Minnesota	10	5.4*	0.55	220*	-	1976
		TOTAL	2.05			

*Revised Figures

Source: Mineral Development Sector, Department of Energy, Mines and Resources.

TABLE 3

ALGOMA STEEL CORPORATION, LIMITED, IRON ORE SUPPLY

Company or Mine and Location	Algoma Ownership	Annual Production Capacity	Approximate Annual Delivery to Algoma	Total Mine & Plant Capital Investment	Capital Cost per Annual Ton	Completion Date of Construction
1973	%	(Millions of Metric Tons)		$ millions	$/metric ton	
Algoma Ore Division near Wawa, Ontario	100	1.8	1.8	-	-	-
Steep Rock Iron Mines Ltd., near Atikokan, Ontario	0	1.4	1.1	-	-	-
International Nickel Company of Canada, Ltd. Copper Cliff, Ontario	0	0.7	0.15	-	-	-
		TOTAL	3.05			
Tilden Mine, Michigan	30	4.1	1.2	2.00	48.75	1974

Source: Mineral Development Sector, Department of Energy, Mines and Resources.

TABLE 4

DOMINION FOUNDRIES AND STEEL, LIMITED (DOFASCO), IRON ORE SUPPLY

Company or Mine and Location	Dofasco Ownership	Annual Production Capacity	Approximate Annual Delivery to Dofasco	Total Mine & Plant Capital Investment	Capital Cost per Annual Ton	Completion Date of Construction
1973	%	(Millions of Metric Tons)		$ millions	$/metric ton	
Adams Mine, Boston Twp., Ontario	100	1.0	1.1	31	31.00	1964
Sherman Mine, Temagami, Ontario	90	1.0	1.0	57	57.00	1968
Wabush Mines, Wabush, Labrador	16.4	6.1	1.0	300	49.18	1965
		TOTAL	3.1			
1976						
Eveleth Taconite Co., Minnesota	8.5	6.1	0.6	176	28.85	1976

Source: Mineral Development Sector, Department of Energy, Mines and Resources.

EXHIBIT 3

COAL SUPPLY ARRANGEMENTS BY COMPANY

1. STELCO

(i) Equity (approximately 60% of its coal requirements are obtained from these properties, and all are located in the U.S.)*

Kanawha Coal Company, West Virginia (Chisholm Mines)	(100%)
Pikeville Coal Co., West Virginia (Madison Mines)	(100%)
Mathies Coal Company, Pennsylvania	(13.3%)
Beckley Coal Mining Company, West Virginia	(12.5%)
Olga Coal Company, West Virginia	(10.0%)

(ii) Contract Purchases

The Pittston Company (U.S.)	(5 years)
Maple Meadow Mining Company, West Virginia	(12 years)
Cape Breton Development Corp., Nova Scotia	(about 5 years)
McIntyre Mines Limited, Alberta	(annual contract)

Stelco also purchases in the spot market when necessary.

2. ALGOMA

(i) Equity (approximately 100% of its coal requirements are met by Cannelton Industries, a wholly-owned subsidiary, and all its properties are located in the U.S.)

Cannelton Coal Division (Cannelton Industries, Inc.)
- Kanawha Mines, West Virginia
- Pocahantas Mines, West Virginia
- Indian Creek Division, West Virginia
- Maple Creek Mining Co., West Virginia

(ii) Contract Purchases

None, but Algoma purchases on the open market when necessary.

EXHIBIT 3
(continued)

3. DOFASCO

(i) Equity (about 18% of its coal requirements are obtained from Ittmann Coal Company, located in the U.S.)

Ittmann Coal Company, West Virginia	(9%)

(ii) Contract Purchases

Eastern Associated Coal Corp. (U.S.)	(long term)
Consolidated Coal Co. (U.S.)	(long term)
The Pittston Company (U.S.)	(long term)

Dofasco also makes small spot purchases

*Stelco has recently taken a 25% equity position in the Elk River Coal Project.

INTER-FIRM ARRANGEMENTS

The use of joint subsidiaries is a common practice in the steel industry, especially in backward vertical integration. Inter-firm arrangements involving the three major integrated producers are evident in the mining of iron ore and coal. For example,

Iron Ore

a) Tilden Iron Ore Company (Michigan)
   - equity interest held by Algoma and Stelco.

b) Wabush Mines (Newfoundland and Quebec)
   - equity interest held by Stelco (25%) and Dofasco (16.4%).

c) Eveleth Taconite Co. (Minnesota)
   - equity interest held by Stelco (14%) and Dofasco (8.5%).

Coking Coal

a) Maple Creek Mining Co. (West Virginia)
   - 100% owned by Algoma
   - Stelco is a major customer of the mine, and provided start-up capital.

Stelco, the dominant steel producer, is noticeable by its participation in every one of the ventures. Stelco and Dofasco appear to be the common partnership arrangements in the industry joint ventures. Two competitive implications arising from intra-industry joint subsidiaries are worth noting.

1. A joint venture between large competitors, regardless of its purpose and regardless of how small it may be in relation to their total business will inevitably result in close association and collaboration between the parties.[4]

2. The industry is one in which costs of production are heavily influenced by the cost of assembly of raw materials, and when several companies obtain materials from common sources they have a strong basis for common prices.[5]

STEEL SCRAP

Scrap has become an increasingly important raw material input in the manufacture of steel. Industry sources contend that "approximately 60% of the scrap consumed in steel making is generated internally and 40% is purchased from traders". Rising demand for steel scrap, resulting from the expansion of electric furnace production and general demand for steel, has prompted Stelco to protect itself against rising scrap prices by constructing a direct reduction kiln at its Griffith Mine for the purpose of producing a substitute for scrap. Stelco installed a 400,000 ton-a-year SL-RN processing unit, at the Griffith Mine in Ontario. The Mine is 100% owned by Stelco and it intends to process over one third of its 1.6 million ton output of oxide pellets into sponge iron. The sponge iron will be shipped to Stelco's electric steel furnaces--two at Edmonton and one at Contrecoeur, Quebec. In addition, in 1974 Stelco acquired a 50% interest in Fers et Métaux Recyclés Ltée., Quebec, which operates facilities at La Prairie, Quebec, to collect and prepare ferrous scrap, primarily for the McMaster works at Contrecoeur, Quebec.

Algoma is self-sufficient in scrap, because its product mix generates large quantities of circulating scrap. This is in contrast to Dofasco, which must purchase some scrap externally, because its product mix generates less internal circulating scrap.

ACQUISITIONS

Stelco

Since World War II, seven new firms have entered the Canadian steel industry--Interprovincial Steel and Pipe Corporation Ltd., Ivaco Industries Ltd., Lake Ontario Steel Company Ltd., Premier Steel Mills Ltd., Quebec Steel Products Ltd., Western Canada Steel Ltd. and Western Rolling Mills Ltd.--and of these only Premier

Steel Mills was acquired by Stelco. Although management contends that it has not "engaged in an aggressive acquisition programme", Stelco has acquired a number of important companies. The acquisitions were generally vertical mergers in a steel related line of business. Stelco's philosophy on mergers and acquisitions as indicated in their brief to the Royal Commission is that the companies involved

> ...could benefit from an association with a larger company with greater financial, technical and personnel resources. Generally, Stelco has been aware that the management and a significant group of shareholders is seeking such a purchaser ....In most cases, Stelco has anticipated that it would profit from its acquisition by making more efficient use of available resources in the areas of management, operating, technical, research and planning personnel. Savings would accrue to the merged companies by eliminating overlapping functions and broadening the capabilities of the merged companies, to customers by integrated research and technical facilities and to personnel by broadening their opportunities.[6]

For example, in the case of the acquisition of Page-Hersey Tubes, the company

> had a relatively thin management group, had recently lost its chief executive officer by death, and had relatively little research capacity.[7]

> The policy of Stelco is to acquire all the shares of companies that it buys and to merge them into the parent company. With only a few minor exceptions, its only subsidiary or affiliated companies are foreign corporations or companies connected with mining joint ventures.[8]

The following acquisitions are noteworthy:

a) Page-Hersey Tubes, Limited - The company was acquired in 1964, integrated into Stelco six months later, and eliminated as a

separate corporate entity through an amalgamation on January 1, 1969.[9] Page-Hersey was, prior to its acquisition, the largest Canadian manufacturer of pipes and tubes for practically every industrial need. The ownership of the company was Canadian, and its location was Welland, Ontario. Exhibit 4 provides a chronology of some of the key characteristics of Page-Hersey before its amalgamation. The competitive relationship that existed between Page-Hersey and Stelco before its acquisition is significant. First, Page-Hersey was a competitor of Stelco in certain smaller pipe and tube size ranges; second, it was a partner of Stelco in two joint ventures which produced large diameter pipe; and, third, it was a substantial customer of Stelco.

b) Canadian Drawn Steel Co. (1916) - Headquartered in Hamilton, Ontario, this company was bought out by Stelco in 1961. At that time it was described as a "manufacturer that converts hot rolled carbon and alloy steel bars into cold drawn and cold rolled steel". The company was Canadian owned, traded publicly, and had assets of approximately $2 million. Both the plant which had a capacity of 36,000 tons and the storage facilities were located in Hamilton. The company was also an importer of "Stressproof" cold drawn bars, which it sold in Canada under license from La Salle Steel Company of Chicago, U.S.A. The company was merged into Stelco in 1969.

c) Premier Steel Mills Limited (1954) - Headquartered in Edmonton, the company was described in 1960 as a producer of merchant steel, grinding balls and rods, and other special sections. The company also had a wholly-owned subsidiary, Premier Steel Products Ltd., which was engaged in the manufacture of sucker rods and other products, particularly for the oil industry. In 1961 Premier Steel Mills established a reinforcing bar and general steel fabrication operation in Regina called Saskatchewan Steel Fabricators

EXHIBIT 4

PAGE-HERSEY TUBES, LIMITED

1954 - Mfrs. pipe and tubing for practically every industrial need: wrought, black and galvanized iron. Plant at Welland, Ontario with total annual capacity of 316,000 tons of pipe and tubing. Branch offices: Montreal, Winnipeg, Calgary, Vancouver, Halifax and St. John's (Newfoundland). Foreign offices: Buenos Aires, Melbourne and Sydney, London, Madras (India), Trinidad, Kingston, Auckland, Johannesburg, Sao Paulo (Brazil), Lima, Valparaiso (Chile), Maracaibo (Venezuela), Guayaquil (Ecuador), and New York.

1955 - Company entered field of plastic pipe business through the purchase of all outstanding shares of Plastic Pipe Ltd., Renfrew, Ontario.

- In partnership with Stelco, established Welland Tubes Ltd., in Crowland, Ontario to produce electric weld pipe of 20" to 36". This was the first Canadian company to manufacture such large diameter pipes.

1958 - New warehouses were opened on Annacis Island, Vars and in Montreal.

1959 - In partnership with Stelco, formed Camrose Tubes Limited (Alberta) to produce large diameter pipe for the transmission of oil and gas.

1963 - A subsidiary Page-Hersey Tubes Western Ltd. was incorporated in 1962 to operate the new electric-resistance weld pipe mills at Camrose.

1964 - Page-Hersey was bought by Stelco. At this time, it was the largest manufacturer in Canada of steel pipe and tubular products. The company's assets approximated $6.3 million.

1969 - Page-Hersey was merged with Stelco, along with the Crowland, Ontario and Camrose, Alberta operations.

Limited. In 1962, Premier Steel Mills with assets of about $11 million was acquired by Stelco. In 1969 Premier Steel Mills was merged with Stelco, except for Saskatchewan Steel Fabricators Limited which is listed as an associated company of Frost Steel, a wholly-owned subsidiary of Stelco.

d) Shaw Pipe Industries (Ontario) - Through a number of wholly-owned subsidiaries, this company is engaged in the pipe protective business and the manufacture of the following products: protective coatings, plastic, nylon and other synthetic pipes, tubes and hoses, and wooden reels used for the wire and cable industry. The company owns and operates 9 plants in Canada, and one plant (under construction) in Australia. The plants are incorporated as follows: Shaw Pipe Protection Ltd.; Quebec Pipe Protection Ltd.; Shaw Pipe Protection (West) Ltd.; Shaw Pipe Protection (Alberta) Ltd.; B.C. Metals Protection Ltd.; Shaw Flexible Tubes Ltd.; Canura Coating Systems Ltd.; Huntsville Timber Products; Shaw Pipe Protection (B.C.) Ltd.; Shaw Pipe Protection (Australia) Pty. Ltd.; and Shaw Products Ltd. In 1973, Stelco had a 33 1/3% interest in Shaw Pipe Industries which had assets of approximately $13.5 million and net sales of about $19 million.

Stelco has gained certain strategic benefits from its recent acquisitions. First, penetration of the Western Canadian market through the purchase of Premier Steel Mills. This acquisition while not viewed as anti-competitive, did eliminate one of the seven Post World War II entrants into the steel industry (horizontal integration). Second, the acquisition of Canadian Drawn Steel Company has helped make Stelco Canada's largest producer of cold drawn steel bars. The cold drawn steel process represents an important intermediate step between the production of steel and the manufacture of precision steel products. Thus, the

acquisition reflects vertical integration, because it is a step closer to the fabrication of secondary steel products.

Third, Stelco has been promoting a marketing strategy of emphasizing the many uses of steel. In addition to developing products for specific markets, the company has tried to attract more end-users for their products. A key element of this strategy has been to remove some of the fabrication stage for the end-user. Part of this strategy has been implemented through the acquisition of firms which have helped to diversify Stelco's product line, e.g., Shaw Pipe Industries. And finally, the acquisitions have helped make Stelco, the dominant steel producer, also the most "forward" vertically integrated company of the three major producers. Their degree of forward vertical integration beyond primary steel products is approximately as follows: Stelco--30%; Algoma--9%; Dofasco--12%.

Algoma

In 1964, Algoma acquired a 43½% interest in Dominion Bridge Company. Algoma is the single largest shareholder of the company, and three of its senior officers serve on the Board of Dominion Bridge. In 1974, this company had sales of $370,368,000, assets of $279,850,000, and ranked 44 on the Financial Post list of the 100 largest Canadian companies (1975 sales exceeded $500 million). Dominion Bridge is a diversified company whose activities include the production of steel and rolling of bars (in its Manitoba Rolling Mills Division), the fabrication of steel for industry and the construction trade, a warehousing operation throughout Canada and, through subsidiaries, a number of operations in the United States.

Dominion Bridge is a dominant company in the construction industry with plants from coast to coast. It is a large purchaser

of structural steel and plate and "is an important customer of Algoma". The company is engaged in the fabrication and erection of structural steel; the manufacture of industrial cranes, nuclear plant components, custom machinery, boilers and plate work. In the 1970s, it expanded its foreign business, mainly in the U.S. where its principal activities are the manufacture of metal buildings and heavy construction.

Gaining effective control of Dominion Bridge fits in neatly with Algoma's strategy of emphasizing its structural product line, and the importance it attaches to the U.S. market. Of the three major integrated producers, Algoma is the most active exporter, largely to the United States. Traditionally, about 20% of Algoma's sales revenues are realized through export business of which approximately 40% are primary products and 60% non-primary products.

The acquisition of Dominion Bridge represents a forward step in vertical integration by Algoma since Algoma produces steel and Dominion Bridge uses it. In point of fact, Dominion Bridge operates relatively autonomously and purchases steel not only from Algoma but also from other Canadian and foreign producers. "Moreover, since approximately 45% of Dominion Bridge's sales are derived from the United States, a significant amount of steel material is purchased in that country".[10]

Thus, although Algoma has effective control of Dominion Bridge, Stelco and Dofasco executives contend that the company is not a captive customer. Dofasco and Stelco particularly, view Dominion Bridge as an important customer of theirs, and feel that they are competing on equal terms with Algoma. However, they are quick to point out that this situation could change radically if Algoma increases its present share ownership of Dominion Bridge, and if Canadian Pacific Investment Limited, which has controlling

interest in Algoma, decides to rationalize and integrate the operations of the two companies. So far, however, "it has been CPI's practice to leave the day-to-day operations of the individual components to their respective managements, while providing them with assistance in financing, long-range planning, and key staffing appointments".[11] For a description of CPI's holdings see Exhibit 5.

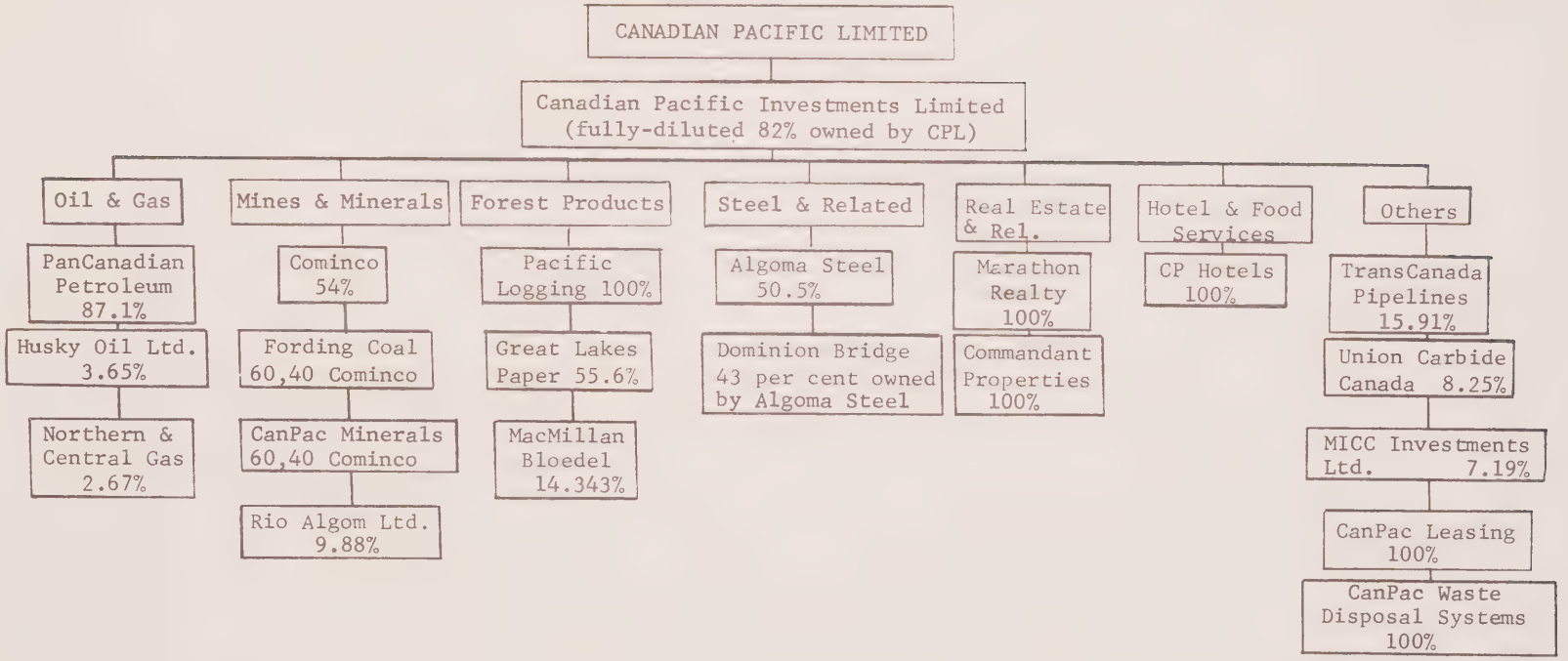
Dofasco

The acquisition of National Steel Corporation (NSC) in 1962 was Dofasco's first move into an area of activity other than basic steel production. NSC produces railway rolling stock including boxcars, hopper, flat, and gondola cars and heavy steel equipment for mining and industrial use. At the time Dofasco purchased NSC it had assets of approximately $17 million. Like Dofasco, the head office of NSC is in Hamilton and its products are sold in Canada and abroad by its own sales organization. Dofasco is a major supplier of the foundry products used in NSCs operations.[12]

In 1973, Dofasco acquired Prudential Steel Limited, based in Calgary, Alberta. This company is a producer of hollow structurals as well as pipe for the oil and gas industry. The company also owns a wrapping plant, Cardinal Tube Coating Limited. Prudential's major markets are located in Western Canada and North Western United States. Dofasco has other interests in western Canada; a 47.8% interest in International Portable Pipe Mills Limited, a company which was formed in mid-1970 by Dofasco, the Alberta Gas Trunk Line Co. Ltd., Spring Mobile Pipe Corp. Ltd. and others to manufacture large diameter line pipe used in transmission of oil and gas; and two other western plants which manufacture pipes and tubes. Thus, the acquisition of Prudential Steel and

EXHIBIT 5

HOLDINGS OF CANADIAN PACIFIC INVESTMENTS WITH ITS RELATIONSHIP TO CANADIAN PACIFIC LIMITED



Source: Royal Commission on Corporate Concentration

the equity interest in International Portable Pipe Mills Limited has given Dofasco an economic foothold in the Western Canadian market.

PRODUCT LINE

The primary steel product line manufactured by each of the three integrated producers is as follows:

EXHIBIT 6

PRIMARY STEEL PRODUCTS BY COMPANY

	Stelco	Algoma	Dofasco
Plate	X	X	
Hot Rolled Sheet & Strip	X	X	X
Cold Rolled Sheet & Strip	X	X	X
Galvanized Sheet and Strip	X		X
Prepainted Sheet	X		X
Tin Plate	X		X
Hot Rolled Bar	X	X	
Reinforcing Bar	X	X	
Rod	X		
Light Structurals	X	X	
Heavy Structurals		X	
Rail		X	
Cold Drawn Bar	X		

The description of each company's product line while interesting, does not identify the more critical dimension, namely, the relative competitive product strength of each of the three major primary steel producers. In an earlier study on the Canadian steel industry, Jacques Singer notes that,

> Dofasco...has concentrated all its rolling facilities in the flat-rolled product groups, and particularly in the production of cold rolled strip and sheet and tin-plate. Stelco's rolling facilities extend virtually across the entire line of rolling mill products, with the major exception of heavy structurals and rails. Algoma's growth pattern in the last fifteen years resulted

> in a significant expansion of flat-rolled and heavy structural rolling facilities (including wide flange beams) which reduced the company's relatively high dependence on rail, bar, light structural, and semi-finished steel sales that existed previously. Its large investment into the rolling of heavy structurals, a product group which had been supplied mainly by imports, was a significant factor in reducing one of the remaining gaps in the product structure of Canadian producers.[13]

Based on interviews with corporate executives in the Canadian steel industry, including those associated with Steel Service Centres, the present day product line landscape appears to be as follows:

a) Plate - Stelco and Algoma account for more than 80% of domestic production. The balance is supplied by Ipsco and Dofasco. It is suggested that the market share for Stelco and Algoma is comparable (i.e., about 40% each). Stelco contends that

> concentration on the selling side of the plate market is offset by the oligopsonistic nature of the buying side. In the case of Stelco, fewer than fifteen customers accounted for 50% of its plate sales in 1974. Stelco's market research indicates that twelve consumers represent 50% of total consumption of steel plate in Canada.[14]

b) Hot Rolled Sheet and Strip - Stelco, Algoma, Dofasco, Ipsco and Sidbec are the major producers of hot rolled sheet and strip. The three major integrated steel producers account for about 80% of domestic sales. On the buying side, Stelco's management makes the point that,

> the market for hot rolled sheet and strip is dominated by a few large buyers. It is estimated that fifteen customers account for 60% of apparent consumption of the product excluding

tonnage consumed by producers in their own operations. Ten customers account for 55% of Stelco's sales of the product.[15]

It should be noted that steel plate and hot rolled sheet and strip are large-volume steel products. A substantial amount of these two products is consumed by the steel producers in the manufacture of steel pipe.

c) Cold Rolled Sheet and Strip - Hot rolled steel is further rolled by the steel companies into cold rolled sheet and strip. Cold rolled steel is steel reduced in thickness by rolling at room temperature under tremendous pressure and tension. Dofasco is almost entirely involved in the manufacture of both hot and cold (flat) rolled products; in fact, it is probably the largest manufacturer of cold rolled and galvanized steel in Canada. Algoma is stronger in hot than in cold rolled steel. The three major integrated producers dominate the flat rolled market.

d) Galvanized, Tin Plate and Pre-Coat - Dofasco and Stelco are the only recognized producers of these products. Tin plate is an important export item for Dofasco and Stelco.

e) Electrical Sheet - Dofasco is the only producer.

f) Rails and Track Material - Sysco is the dominant producer, and Algoma is the only competitor. Sysco is heavily dependent on this product line for its sales in Canada and abroad.

g) Pipe and Tube - The five major producers are ranked as follows: 1. Stelco; 2. Ipsco; 3. Dofasco; 4. Algoma; and 5. Sidbec. Stelco is by far the most important producer of pipes and tubes. Its acquisition of firms such as Page-Hersey gives it a dominating presence in the Canadian pipe and tube market. Ipsco is a somewhat distant second; however, its presence, especially in Western Canada, must be reckoned with in the market place.

h) Skelp - This product is used largely internally in the manufacture of pipe and the producers here are as listed under pipe and tube. In the case of Ipsco plate skelp is its principal rolling mill product and is used in the manufacture of large diameter pipe for oil and gas pipelines.

i) Structurals - For light structural--up to 6", Stelco is the dominant producer; Algoma is second, followed by Lasco, Sidbec and Burlington. For heavy structural--6" and up, Algoma is the dominant producer and Stelco is a distant second. The other producers are not involved.

j) Bars and Rods - Stelco is by far the leading producer, Algoma is a distant second and Sidbec is third. Although the latter company is not a significant producer of bars and rods in industry terms, these products are among its major sales items.

k) Wire and Wire Rod - Stelco is the major domestic producer. Sidbec also produces this product line. Imports constitute an important source of competition.

l) Sucker Rods, Nails and Fencing - Stelco is the dominant producer for these three product items.

m) Grinding Balls and Grinding Rods - Algoma is the dominant producer, and Stelco in this instance is a distant second.

n) Foreign Steel - Imports accounted for 31.6% of Canadian consumption in 1974 and 13.8% in 1975. Imports tend to be plate, hot rolled sheet and strip, and reinforcing bars. While the U.S. was a major source of supply for many years, Japan and Germany have been more aggressive and successful in recent years in penetrating the Canadian market. British Columbia is a major market for imported steel, and interviews with the three integrated producers suggest that they are not competitive with

imports in this region. The Prairies and Ontario tend to be viewed as more protected markets for Canadian steel producers. Montreal, it is argued, is a major centre for imports, and the key customers for imports are Steel Service Centres and automobile manufacturers. The Steel Service Centre industry accounts for about 15% of total steel sales in Canada. Despite the competitive impact of steel imports, the Canadian steel industry has developed largely in a seller's market.

PROVINCIALLY-OWNED AND MIXED ENTERPRISES

The two provincially-owned steel producers are Sysco and Sidbec which in 1976 ranked respectively as the fourth and fifth largest steel producers. The mixed-enterprises (private and public capital) are Ipsco and Burlington Steel. Ipsco is partially-owned by the provincial governments of Saskatchewan and Alberta through Steel Alberta, and ranked sixth in terms of capacity in 1976.[16] Burlington Steel, a division of Slater Steel Industries Limited (SSIL), is a much smaller producing unit and accounted for only 1.6% of raw steel capacity. Unlike Sysco, the public capital participation in SSIL is foreign because it is controlled by British Steel, a U.K. state-owned enterprise. SSIL in turn is an important shareholder of Ipsco. Collectively, these four steel producers account for approximately 15.4% of Canada's raw steel capacity; of the four enterprises, the two provincially-owned firms are "partially vertically" integrated operations.[17]

The governments of Quebec, Nova Scotia, Saskatchewan and Alberta are directly involved in the ownership of regional steel mills. Canadian steel executives view these ventures, with the exception of Ipsco, as not being economically viable, and the

commercial performance of Sysco and Sidbec tends to confirm the private sector viewpoint. Yet, in spite of this, the provincial governments of Nova Scotia, Quebec, Saskatchewan, Alberta and British Columbia are either actively studying the feasibility of establishing integrated steel complexes, or are in the process of expanding their existing steel-producing operations.

SYSCO

Sysco is a Nova Scotia crown corporation which was incorporated by special Act of the Legislature of Nova Scotia in order to acquire and operate the steel making plant and associated facilities of Dominion Steel and Coal Corporation (Dosco) at Sydney, Nova Scotia.

The company's steel product line includes semis (ingots, blooms and billets), rails and tie plates, and reinforcing bars. Sysco supplies generally the rail requirements of Canadian National Railways. It should be noted that Algoma supplies the rail requirements of Canadian Pacific Railways which, through CPI, controls Algoma. Sysco contends that rail prices are negotiated competitively; competition coming from Algoma in the domestic market and from European and Japanese rails externally. The ingots, blooms and billets until recently have been principally sold to other rolling mills in Canada particularly Sidbec-Dosco. This is no longer the case because of Sidbec's expansion program, thus forcing Sysco to increase its exports of semi-finished and finished products.

Approximately 80% of Sysco's coal requirements is obtained under long-term arrangements from the Cape Breton Development Corporation, a Canadian crown corporation. The remaining 20% is bought from the McIntyre Mines Limited, Alberta, under an annual agreement, and from spot purchases in West Virginia, U.S. The

iron ore requirements are purchased from mines in Northern Quebec and Labrador, while the limestone input is satisfied from Sysco's wholly-owned subsidiary. The Sysco steel-making process which consists primarily of Dosco's antiquated blast furnaces and open hearths uses scrap steel purchased in Montreal, in addition to that which is self-generated.

Sysco is the weakest enterprise in the group in terms of technical, managerial and marketing organization and skills. Since it no longer provides semis for Sidbec, it has been forced to export more of its output, thus increasing its vulnerability because foreign markets are more competitive and less dependable. Sysco's poor performance is quite extreme, causing the government of Nova Scotia to lose some $32 million in 1975-1976 alone. Sysco is a high-cost producer but its poor performance is compounded by its dependence on the sales of semis in Canada and, now, on foreign customers, e.g., the (sale) price must conform approximately to the cost of production of ingots, blooms and billets of the customer supplied.

In recent years, charges of mismanagement have been levelled against Sysco, some of which have been documented in an annual report tabled in the Nova Scotia legislature by the Auditor-General A.W. Sarty. His report included the following observations:

> ...there is evidence that management, including the board of directors, has not provided the strong, cohesive, planning-oriented team effort which is so vital to the operation of an undertaking of the size and complexity of Sydney Steel...An examination of the minutes of the board indicates a level of performance with respect to planning and control which must be viewed as inadequate...Even more serious is the fact that the board and management did not

> pursue appropriate formalized review and approval procedures for changes and additions to capital projects.[18]

The latter criticism concerning capital projects generated a major public debate in Nova Scotia. The Auditor-General noted that Sysco had $143 million of capital projects in progress at March 31, 1974; however, only $70 million had been approved by the board. Moreover, it did not appear that the projects approved by the board had been formally approved by the government.[19] One primary goal of the capital expenditure program was to renovate Sysco's antiquated steel-producing furnaces and hearths.

> Basically, the whole renovation was based on the idea that basic oxygen furnaces (BOFs) would be installed to replace the aging open hearth furnaces. The renovation progressed on the assumption that the BOFs would be there. But for unexplained reasons the BOFs were dropped (Sysco management opted instead for a flaky system of its own invention to upgrade the existing furnaces. It didn't work.)
>
> So now a continuous-casting system is functioning at half-capacity because it doesn't have the output of the basic oxygen furnaces to feed it. And a new lime-burning plant, completed last spring, was put into mothballs immediately because its output was meant for the BOFs.[20]

Despite the financial losses and questionable management practices, some expansion of the existing operations is taking place. Sysco hopes to become more competitive as a result of the reconstruction and expansion of its old rail mill, which has proved to be its most successful product line.

The financial and political problems associated with Sysco, and the view increasingly shared by government, union and local

business that Sysco cannot be made viable, has prompted the government of Nova Scotia to study the feasibility of building a new, export-oriented, steel plant capable of producing 3-4 million tons of steel a year. The projected location for the steel complex is Cape Breton.[21]

Cansteel Corporation, a new provincial crown corporation, is co-sponsoring the feasibility study with four major steel producers, including Dofasco. A preliminary study of the steel complex was made by Stelco Technical Services at the request of the Department of Regional Economic Expansion, who financed it. Some of the senior executives of the three major integrated steel companies in Canada have voiced the opinion that the viability of a modern steel-making complex in Nova Scotia can be assured only if there are steel-fabricating partners in the venture, i.e., partners who will function as customers of the proposed steel complex.

SIDBEC

In the same way as Sysco purchased Dosco's primary steel mill in Nova Scotia, the Quebec government through Sidbec, a provincially incorporated crown company, acquired Dosco's operations in Quebec and Ontario. At present Sidbec has five electric furnaces with a total annual capacity of about 1 million tons of raw steel, hot and cold rolling mill facilities, a tube mill and fabricating facilities. With the exception of a wire plant in Etobicoke, Ontario, Sidbec's manufacturing operations are based in Quebec. Like Sysco, Sidbec has been operating at a substantial loss;[22] however, with its large-scale expansion plan and new facilities, Sidbec's future looks healthier than Sysco's. Currently, Sidbec is dependent on iron ore from non-captive domestic and foreign sources. With the development of the Fire Lake

project, however, it will have its own captive suppliers in 1977.

Sidbec's product line includes bars, structurals, hot and cold rolled products, and reinforcing bars, as well as some secondary and tertiary steel products. Most of the products are sold to customers in the province of Quebec.

Initially, Sidbec's furnaces produced steel largely from scrap purchased in Quebec and Ontario. Quebec's deficiency in scrap prompted Sidbec to establish facilities for the manufacture of sponge iron to supplement scrap as a feed for the electric furnaces. A Midrex processing unit was installed at the Sidbec-Dosco steel plant at Contrecoeur, Quebec. The 400,000 ton-a-year complex started production in 1973, and in 1974 produced 370,000 tons of sponge iron.

A large expansion project is being carried out by Sidbec in Quebec that will make it Canada's fourth largest fully integrated steel producer. Included in Sidbec's expansion plans are a 50.1% equity investment in the Fire Lake mine and beneficiation plant in northern Quebec; a 6 million long tons-a-year pelletizing complex at Port Cartier, Quebec; and the expansion of the existing Midrex direct reduction facilities from an annual capacity of 0.4 million tons to 1.1 million tons of sponge iron.

Sidbec expects to expand its annual steel output from 0.9 million tons to 1.6 million tons by the addition of two electric furnaces. The expansion program is to be completed by 1977 and will increase Sidbec's overall capacity to three million long tons of iron ore pellets, over one million tons of sponge iron and 1.6 million tons of steel. Since Sidbec's expansion plans will only require 1.5 million long tons of iron ore pellets for its sponge iron production, the remaining 1.5 million tons of captive high-grade pellets will be disposed of on the open market for a period of time.

One of the interesting features of the "Fire Lake" iron ore project (Sidbec-Normines Ltd.) is that Sidbec's chief partner is a foreign government owned enterprise, namely British Steel Corporation (International) Ltd., a wholly owned subsidiary of Britain's state-owned British Steel Corporation. The British-owned enterprise will have a 41.67% interest in the operation.

As in the case of Nova Scotia, the government of Quebec felt obliged to buy out Dosco's Quebec operations; however, as a regional economy, Quebec has more to offer than Nova Scotia. In addition, increasing government involvement through crown corporations, mixed enterprises and the "Francicization" of business in Quebec has allowed Sidbec to develop "captive markets" and "favourably disposed customers". Moreover, Sidbec's current expansion program has been partially fostered by the Quebec's government goal of processing Quebec's iron ore in Quebec, e.g., Fire Lake venture. Although a major producer in Quebec, Stelco perceives itself at a disadvantage when competing with Sidbec in the province of Quebec. Stelco has an ongoing program to "Francicize" its Quebec operations: the senior executive in charge of administration for the Eastern Region, including Quebec, is a French Canadian, and 70% of the employees are French Canadians.

IPSCO AND THE GOVERNMENTS OF WESTERN CANADA

All four Western provinces--Manitoba, Saskatchewan, Alberta and British Columbia--have some steel-producing capacity, and the governments of each of the provinces are currently engaged in promoting the expansion of its local capacity through government participation. Although the four governments appear to be pursuing their own local industrial strategies, there seems to be a consensus that Western Canada should have its own steel-producing

complex, integrated from ore to finished product, and that in the case of Alberta and Saskatchewan, International Steel and Pipe Corporation (IPSCO) should form the basis of such a complex.

The company's total assets in 1975 were $134 million and net sales approximately $152 million. While Ipsco is a public company, two provincial governments, Saskatchewan and Alberta, own 22% each of the outstanding common shares of the firm. Slater Steel, controlled by British Steel, also owns 22% of the outstanding shares, and the remaining shares (34%) are held by the public at large.

Ipsco is a Western Canadian firm, not only in terms of ownership, but also with reference to location of headquarters, assets, and sales. The company's main steel plant is located in Regina where it has four electric arc furnaces with a total melt capacity of raw steel of 600,000 tons per annum. The plant also includes rolling mills and pipe manufacturing facilities. The Edmonton and Calgary facilities in Alberta and the Port Moody and Vancouver units in British Columbia are largely pipe-producing facilities.

Directly and through its subsidiaries, Ipsco manufactures, processes and sells the following steel products: skelp, sheet, coil, plate, strip, steel pipe, oil, gas and water-well casing, water pipe and hollow structural tubing. Approximately 80% of Ipsco's total production is sold in Western Canada, 12% in Ontario and Quebec and about 8% in the United States. Hot rolled sheet and plate is the only primary steel product produced by Ipsco; moreover, only about 45% of the sales of hot rolled sheet and plate were manufactured by the company, with the remainder involving the resale of Japanese steel. It was estimated that in 1973 about 60,000 tons of steel were sold as primary steel products or about 12% of the company's total steel products.

Steel scrap is the principal raw material, and a part of Ipsco's requirements is obtained partly under a system arranged with the Saskatchewan Wheat Pool whereby some 1,300 elevator agents are available to buy and collect scrap on its behalf. Other sources include Ipsco's automobile shredding plant at Regina, and significant purchases from suppliers in North and South Dakota, Montana and Wisconsin. The company is currently studying the feasibility of direct reduction as an alternative source of iron units. The reduction facilities would be part of an overall expansion of Ipsco's electric steel-making facilities designed to increase Ipsco's steel-making capacity from a current 600,000 tons a year to 1.0 million tons a year by the end of the decade, and to reduce the company's reliance on imported scrap steel.

It is as a manufacturer of steel pipe that Ipsco's market strength stands out, particularly in Western Canada. The company's recent acquisitions in Western Canada will help to strengthen further its narrow but profitable steel pipe and tube operations. The acquisitions include: (1) Lambton Steel Ltd., a Vancouver-based processor and distributor of sheet and plate steel, which also functions as the parent company's distributor of sheet and plate; (2) Wescan Coating Ltd., an Edmonton-based company which operates a powder fusing coating plant; and (3) Brooks Tube Ltd.

Since approximately 80% of Ipsco's sales are realized in Western Canada, the governments of Alberta and Saskatchewan are trying to use this firm as a vehicle for building a regional integrated steel industry. What is less certain is whether the efforts of the two governments will lack integration, and rationalization and thus lead to costly duplication of effort.

Steel mills in Western Canada depend largely on scrap to

produce merchant mill products (bars, light structurals, flats) and plate for the manufacture of pipe and oil storage tanks. In 1975 steel-making capacity in Western Canada was estimated to be 1.3 million tons with a projected figure of 3.4 million tons by 1985.[23] In order to realize this projected figure, the electric steel-making furnaces in Western Canada will require adequate, stable and competitively priced sources of scrap and sponge iron. In 1973-74 the supply of scrap fell below requirements because of local shortages. In addition, rising prices coupled with government restrictions imposed on the export of U.S. scrap further demonstrated the vulnerability of Western steel mills because of inadequate local sources of raw steel. For this reason,

> The Alberta Government is determined that there will be available in Alberta, a secure supply of raw steel...Secure supply to us means a supply of steel derived from a mill located in one of the four western provinces. The Government also believes that the Western Canadian market is too small to allow small fragmented uneconomic facilities to be constructed - consequently Alberta will co-operate with the private sector to build a strong, economically viable, integrated industry. The Alberta Government has recently created Steel Alberta, which is intended to facilitate this co-operation.[24]

Similarly in 1975, the Saskatchewan Minister of Industry and Commerce stated that

> The Saskatchewan government, in its desire to strengthen significantly the Province's economic base, has undertaken to sign a General Development Agreement with the government of Canada in which the governments agreed to co-operate jointly in selecting and implementing a steel development strategy for Saskatchewan. A subsidiary agreement on iron, steel and other related metal industries was signed 4 July 1974, to pursue the following objectives:

> (a) Enhance the viability of the existing iron and steel industry in Saskatchewan; (b) expand and diversify iron and steel production in Saskatchewan; (c) provide a substantial increase in the number and range of employment opportunities in the iron, steel and other related metal industries in this province.
>
> The main elements of the Agreement include an iron ore exploration programme; establishment of a direct ore reduction plant; the development, expansion and diversification of primary and secondary iron and steel facilities, the development, expansion and diversification of foundries and related metal industries, and financial assistance for the establishment of associated infrastructure facility.[25]

The governments of Alberta and Saskatchewan recognize that the future expansion of Ipsco cannot be based on steel scrap as the sole raw material supply. Future growth requires the development of an iron ore supply for the company's proposed direct reduction plants in the two provinces, and it is to this end that the provincial governments are pursuing their current iron ore exploration programs.

The geographic proximity of Algoma's steel-producing complex to Manitoba may explain in part why this province has not shared the real and perceived sense of isolation experienced by British Columbia. Moreover, certain B.C. businessmen contend that general seller's market conditions in the Canadian steel industry have not motivated the Ontario-based steel producers to invest either in the manufacture of steel, or in the adequate support servicing of steel users in British Columbia. These factors were in no small measure responsible for the decision taken by the government to investigate the commercial feasibility of building a local steel complex.

In December of 1973, Nippon Kokan Kaisha (NKK), Japan's

second largest steel-maker and fifth largest world-wide, prepared a "preliminary proposal for integrated steel works at British Columbia", for the government. The proposal involved the establishment of a coastal integrated steel-making complex with annual capacity of four million metric tons of crude steel. If deemed feasible this steel complex would be financed and managed through a joint-venture arrangement involving NKK and the British Columbia government. The defeat of the New Democratic Party (Socialist) government by the Social Credit (private-enterprise oriented) party in 1976 did not initially result in a termination, or lessening of interest in the proposal by either the Japanese firm or the new British Columbia government. The cost of the studies exceeded one million dollars, shared equally by the government and NKK. Although NKK continued its investigation with the support of the government, its enthusiasm for the proposed steel complex was dampened because of the general economic recession coupled with the view that the supply of local skilled labour was small and that in British Columbia its propensity to strike was great. The latter factor was particularly important to NKK because the bulk of the output of the proposed steel complex would have been exported. According to Mr. Hisao Makita, president of NKK,

> It is premature for me to say whether I am optimistic or pessimistic....For a steel mill having a good work force is the most important factor. That comment may explain why so much time has been spent on researching possible locations....Nor is the Canadian reputation for strikes one that the Japanese are comfortable about. You have to work to survive....[26]

Later in 1976, NKK and the government of British Columbia decided to shelve the project indefinitely.

The major integrated producers have an equivocal attitude

towards Canadian government intervention. On the one hand, they object to government interference with the market mechanism, but on the other hand the high cost of investment in new steel facilities (e.g., Nanticoke for Stelco), "is such that partnership with government on new facilities is becoming almost essential".[27] Government involvement in steel production is not a new phenomenon. In a global context, in 1973, 43% of steel production came from government-owned plants, and an additional 29% from government-controlled plants or those with strong government backing. A recent survey of new steel plant projects in Europe and the developing countries indicated that 90 million of the 110 million metric tons of new capacity could be identified as public sector.[28]

BURLINGTON STEEL

Headquartered in Hamilton, Ontario, Burlington Steel is the rolling mill division of Slater Steel Industries Limited (SSIL). The other division, Slater Products, specializes in the manufacture of hardware for use in the utility industries. SSIL had sales of approximately $64 million in 1975, and it is estimated that about two-thirds of this volume was earned by Burlington Steel which operates a steel bar rolling mill and three electric furnaces for the production of steel ingots at a plant located in Hamilton. The company's product line includes reinforcing, merchant and structural bars.

Measured in terms of sales or assets, Burlington Steel is a very small producer. In January of 1976, it accounted for only 1.6% of Canadian raw steel capacity. However, it is the ownership by SSIL and, in turn, its Canadian ownership interests, which makes this firm and its parent company worthy of future study. For example, 50.2% of the outstanding stock of SSIL is

held by Stanton Pipes Limited, a wholly-owned subsidiary of British Steel Corporation. Slater Steel in turn owns a 20.2% interest in Ipsco. British Steel Corporation International Limited, a wholly-owned subsidiary of British Steel Corporation, also has a 41.67% interest in the Fire Lake Iron Ore Project. Although this investment reflects British Steel's search for iron ore sources for its U.K. furnaces, one cannot rule out the possibility that Quebec iron ore pellets may also be destined for consumption in Burlington Steel. This investment may provide the raw material base for expanding Burlington's future steel capacity (see Exhibit 7). In addition, it has been noted that British Steel is actively seeking the acquisition of a U.S. Steel Service Centre firm through which it could then import its own steel into the U.S. market, and thereby minimize the dumping criticism often levelled against U.S. importers of foreign steel.

SMALL AND ENTREPRENEURIAL PRODUCERS

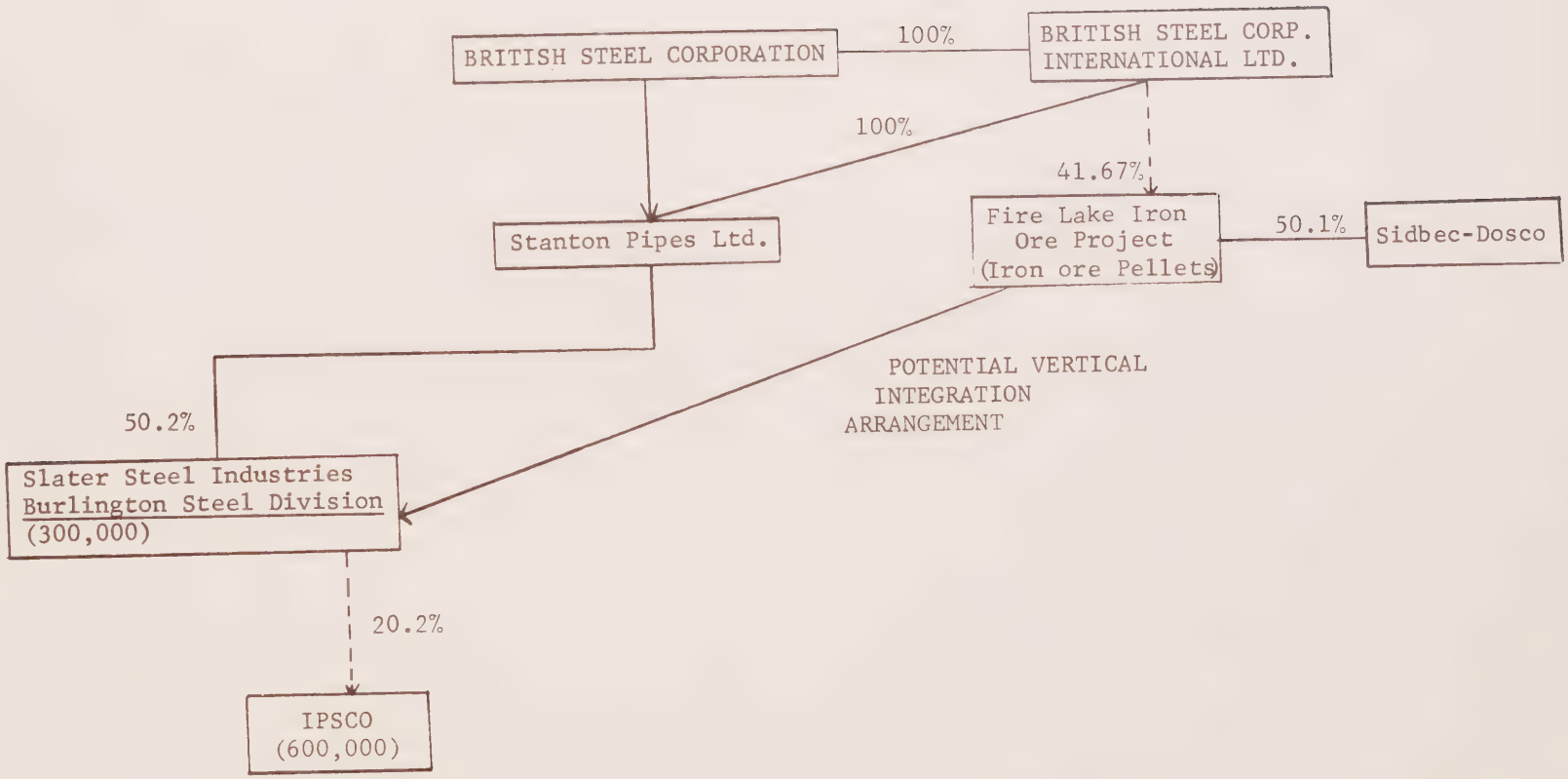
The remaining five steel producers collectively account for 6.8% of Canadian steel capacity. With the exception of Atlas Steels, which is a significant producer of specialty steels, none of these producers ranks high in terms of product (however narrow) or market (however local) strength. Nonetheless, these firms exhibit certain characteristics worth noting and some of them potentially have competitive implications for the Canadian steel industry.

WESTERN CANADA STEEL AND MANITOBA ROLLING MILLS

Western Canada Steel Limited (WCSL) is a wholly-owned subsidiary of Cominco which in turn is controlled by Canadian Pacific Investments Limited. WCSL's raw steel capacity is approximately

EXHIBIT 7

BRITISH STEEL - SLATER STEEL



270,000 tons. The company's electric furnace facilities are based in Vancouver and Calgary. The Vancouver plant accounts for approximately 80 per cent of total capacity. The company produces rolled steel products (re-bar and merchant bar) and industrial fasteners, which are sold principally in the Western Canadian market, with some exports to the United States. WCSL has a 51 per cent interest in Hawaiian Western Steel Limited of Honolulu which operates a 40,000 ton reinforcing bar plant. Consolidated 1975 sales for WCSL was $47.9 million, which includes the operations of the Hawaiian subsidiary.

In August of 1961, Dominion Bridge Company Limited acquired Manitoba Rolling Mills (MRM) Company, Ltd. MRM is now a division of Dominion Bridge, and operates a steel-making facility at Selkirk, Manitoba. The plant's electric furnaces have an annual steel-making capacity of some 160,000 tons, as well as continuous casting and rolling mill facilities. MRM produces light structurals, and merchant and reinforcing bars. In 1974, Dominion Bridge disclosed that 22% of its sales ($370,368,000) come from its steel manufacturing and distribution activities, that MRM sales are in the order of 10% of Dominion Bridge sales, and that about 40% to 50% of MRM sales are to other branches and divisions of Dominion Bridge.

To-date, Algoma, Western Canada Steel Limited (Cominco) and Manitoba Rolling Mills (Dominion Bridge) operate independently of each other, and in fact compete in the market place. This element of independency is readily acknowledged by the other steel producers, in the context both of purchases and sales of steel products. Whether this market relationship will continue in the future is not certain. As previously noted, CPI controls Algoma, and Algoma in turn is a dominant shareholder of Dominion Bridge. In the case of WCS, CPI controls Cominco (see Exhibit 5). It

has been suggested that CPI plans to expand its metal fabricating activities in Canada and particularly in the U.S. Dominion Bridge, by virtue of its operations in Canada and the U.S., offers an excellent vehicle for such expansion. If Algoma and Dominion Bridge's operations (which includes Steel Service Centres) were rationalized, then Algoma would gain added presence in Western Canada, and the argument for bringing WCS into its ambit would be a compelling one. The dynamics of such a potential corporate strategy, however, must not ignore the fact that the present combined Canadian steel-making capacity of WCS and MRM is only 2.2%, albeit, located in Western Canada.[29]

ATLAS STEELS

Burlington Steel and Atlas Steels are the two foreign-owned steel producers in Canada. Both companies are U.K. controlled. Rio Algom Limited, through its Atlas Steels Division, is Canada's largest integrated producer of stainless and specialty steels and markets its products in Canada and abroad. Sales for the Steels division was approximately $226 million in 1974. The major shareholder (59.72%) in Rio Algom Limited is the Rio-Tinto-Zinc Corporation of London, England. It is interesting to note that CPI has a 9.88% interest in Rio Algom.[30]

Atlas Steels is the largest significant producer of stainless steel in Canada, and exports about 30% of its output. The division's specialty steels are grouped into three principal categories: stainless steels (52.4% of total steel revenue); machinery steels (17.4%); and other steels and metals (30.2%). Government studies tend not to view stainless steel as being in the range of primary iron and steel products. In the context of Atlas Steels production, less than one-fifth (about 18%) of its revenue was accounted for by its sales of carbon and alloy steel, a primary iron and

steel product. Moreover, Atlas views the carbon steel market as merely an outlet for its excess raw steel-making capacity in its stainless and specialty steel operations. Atlas' raw steel-making is 1.5% of the Canadian total.

LASCO AND QSP LIMITED - THE ENTREPRENEURIAL FIRMS

The majority interest in Lasco is vested with Co-Steel, a Canadian company owned by a group of Canadian private investors associated with Co-Steel's president, Mr. G.R. Hefferman. Lasco's facilities are based in Whitby, Ontario, and include electric furnaces with an annual steel-making capacity of some 400,000 tons of finished steel (2.1% of Canadian capacity), continuous casting machines, and rolling mills. Lasco is considered to be the most efficient and profitable steel producer in the electric group of companies, which collectively account for about one-fifth of the steel industry's output.

Lasco produces reinforcing bars, small structurals, and merchant bars and special quality bars. Lasco's products are merchandised largely in Ontario, Quebec and the Northern United States. The American market accounts for about one-quarter of Lasco's sales and total exports in 1976 may equal domestic sales. There is also an international dimension to Lasco; through Co-Steel, the company has sister affiliates (Minimills) in the United Kingdom and United States.

The Josephson family controls QSP Ltd. This company is headquartered in Lachine, Quebec, and had total assets of approximately $80 million, and gross revenue of about $70 million in 1974. The company operates a steel mill at Longueuil, Quebec, collects and processes scrap metals in Montreal and Quebec City, fabricates and erects structural steel, produces and supplies reinforcing steel for the construction industry, and operates steel service

warehouses. The company also has extensive trading operations.

The company's integrated steel mill consists of two electric arc furnaces, continuous casting machines and a rolling mill. The steel mill has an annual capacity of 200,000 tons (1% of Canadian capacity). The product range produced includes bars, angles and channels.

SUMMARY OBSERVATIONS

Certain generalizations can be drawn from the commercial operations and managerial behaviour of the smaller steel producers. First, these companies tend to fill a niche in the market place by producing a narrow product line for regional requirements. Steel Service Centres are usually the major customers for such firms. In the case of QSP Ltd., MRM, and Atlas Steels, they either have their own, or are corporate affiliates of, Steel Service Centre organizations.

The competitive importance of Steel Service Centres in the Canadian steel industry should not be underestimated. A Steel Service Centre is generally viewed as a marketing intermediary, functioning between the producer and the steel user, which facilitates the distribution of steel by adjusting quantities and by providing first step processing.

Most Steel Service Centres carry an inventory of plates, bars, sheets, strip and structural shapes, and related items. One of their essential functions is to group small orders, thus permitting them to buy in substantial quantities from the steel producers. This marketing activity allows the producer to realize certain firm economies of scale. In addition, the Centre performs such services as cutting, bending, pickling, heat treating, painting and related operations. The objective in marketing such pre-production services is to make it more commercially profitable

for steel users to patronize Steel Service Centres. The number of common customers between producer and Centre will vary with each Steel Service Centre; however, for the larger and more progressive Centres, the major share of business originates with customers who buy from producers as well. Approximately 15% of the total tons of steel produced in Canada is shipped by Steel Service Centres to steel users, and about 50% of foreign steel imports is handled by these Centres.

Second, as in the case of the wholly or partially government-owned enterprises, the smaller steel producers who make up the rest of the industry tend to follow the price leadership of the "dominant three". In a memorandum submitted to The Royal Commission on Corporate Concentration, the United Steelworkers of America made the following point:

> Paradoxically, this has sometimes resulted in profit levels for some smaller producers which are higher than those of the Big Three themselves. For example, Mr. Jack Turvey, President of the Interprovincial Steel and Pipe Corporation, (IPSCO) testified before the Steel Profits Inquiry that IPSCO had no choice but to match price increases by Stelco, even in cases where his company could sell a particular product for less. As Mr. Turvey put it: 'We're in no position to take them on by underselling them'. In 1974, IPSCO had net earnings which were 26.7% of shareholder's equity.[31]

Finally, the entrepreneurs who own the small steel producing firms are usually lacking in managerial, marketing and financial capacity and skills, as appears to be the case with the small firms, which are experiencing financial difficulties. The steel products produced by these firms are conditioned by low capital requirements. Thus, for example, the higher steel specification requirements of the automobile industry are rarely met by the small, entrepreneurial firms.

Certain executives in the steel industry suggest that a prime goal of some of the owners of the smaller firms is "to quickly sell-off their new venture at a profit to one of the integrated producers". It is their contention that the entrepreneurs do not possess the inclination, managerial know-how, financial capital, nor the ability to attract and retain competent personnel in order to make the transition from an entrepreneurial venture to managing a large integrated steel-making complex. For example, Premier Steel was sold to Stelco; Western Canada Steel was sold to Cominco; Ipsco followed a similar path; and it appears that QSP Ltd. would not be adverse to experiencing a similar fate; and even Lasco, the most efficient operation of the group, might be a candidate for a take-over.

3

CORPORATE DUALISM AND COMPETITION IN THE CANADIAN STEEL INDUSTRY

INDUSTRY DEFINITION AND CONCENTRATION

Competition in the steel industry can be viewed in terms of a variety of indicators. At the outset a definition of the industry is required, which presents a problem where the industry is regionally dispersed and vertically integrated. It has been noted that the twelve firms in the Canadian industry differ in terms of their degree of vertical integration, the type of production process used, the primary steel products produced, the regional markets in which they sell and the end-users to whom they sell. In addition, import competition has to be taken into account.

The one item common to all twelve firms is the production of molten steel, ingots, and semis from one or more of the three types of steel furnaces. On a national basis, concentration at the raw steel stage is such that the largest three firms have 73% of the raw steel capacity, the largest six have 87% and the largest twelve have 95% - see Table 1. As indices of competition, these figures have limited value. First, relatively few ingots or semis are sold on an arm's length basis since most are processed internally by the twelve firms into primary steel products. Competition therefore takes place at the primary steel product stage, not at the ingot and semis stage. When competition between producers of primary steel products is considered, not all twelve firms produce a full range of products. Stelco has the widest product range; Dofasco specialises in hot-rolled and cold-rolled sheet and strip; Stelco and Algoma dominate domestic plate production, with the balance supplied by Ipsco and Dofasco; Algoma

specialises in structurals together with Sysco and Lasco; Stelco is the largest producer of skelp and pipes (through Page-Hersey in the west); Dofasco is also a producer of skelp (through Prudential), and Ipsco specialises in producing pipes and tubes; and Atlas is the only significant Canadian producer of stainless steel. These examples show that measures of industry concentration at the semis stage implies more competition than actually exists when the distribution of primary steel production between firms is considered. It should also be noted that there is some interchangeability of equipment between products, e.g., equipment that can make rails and intermediate structural products, can also make bar mills and light structural products. This factor on its own tends to broaden a firm's product range and increase actual or potential competition.

A second way in which industry concentration overstates the extent of competition is that the national market is regionally segmented because of the geographic spread of producing firms and consumers. When this regional distribution is allocated to firms and individual primary steel products, there may exist very highly concentrated regional monopolies or oligopolies which are not reflected in national concentration figures. This is especially the case where transport costs are an important factor in the delivered price to the buyer, as is the case with steel products.

On the other hand, competition is increased as a result of imports, which have ranged between 17% and 32% of apparent consumption, 1964 to 1974. Three aspects of imports are important. First, imports are a more competitive factor, accounting for a higher percentage of apparent consumption in eastern Canada and British Columbia than in central Canada and the Prairies. Second, the most favoured nation Canadian tariff rate ranges from free for iron ore, and iron and steel scrap, to 17½% for forgings; most

items have a 10% or 12% tariff.[1] And third, the type of steel products imported tends to be more highly processed and specialty products. For example, in 1975, imports were distributed between 100 classes of products, whereas exports were distributed between 25 classes. Thus a number of the imported steel products probably do not compete with domestic production because there is none.

In 1975, steel imports came principally from the United States, Japan, United Kingdom, West Germany and Belgium-Luxembourg, with 44% of total imports coming from the United States. The Canadian steel industry has developed over the years in a seller's market with a very high level of capacity utilization. For example, from 1963 to 1973, capacity utilization fell below 94% in only two years, one of which was due to a major strike in the industry. There has always been room for imports because of product specialization by firms and the fact that Canadian steel capacity has always been expanded in a conservative manner, allowing imports to fill any excess demand that developed.

Exports of Canadian steel products are almost entirely to the United States. For example, in 1975, exports to the United States were 1.1 million tons, to Mexico 63,000 tons, United Kingdom 30,000 tons, France 13,000 tons and to Italy 10,000 tons. From 1971 to 1975, exports to the U.S. as a per cent of total exports ranged between 72% and 79%.

Finally, the extent of competition is understated as a result of defining the industry in terms of steel only and ignoring substitute materials. Depending on the end-use, steel competes with a number of materials such as aluminum, copper, plastic, cardboard, concrete and glass. One unusual example of substitution forced by wartime shortages was the construction of penstocks (pipes to carry water) at a hydro-electric dam in Quebec by boring through rock, because of a shortage of steel to make the pipes. In some

uses, such as the production of rails, there are no direct substitutes; however, it should be noted that other forms of transportation displace railways, so that there can be indirect substitution here also.

PRODUCT DIFFERENTIATION

The steel industry is frequently described as one involving a homogeneous product or little product differentiation. This description appears plausible at the outset but has to be modified in a number of ways. The production of semis undertaken by all firms results in a homogeneous product, except that the quality of the ingot and semi can be affected by the handling of the production process. The opportunity for greater variations between similar products of different firms occurs if alloy steels are made, and when rolling mill products are produced. Quality control is dependent on the skill associated with setting up machinery to make different mill products. It is easier to sustain quality where machinery is used to make long product runs than where frequent changeovers and resetting of machinery is required.

Product differentiation also occurs because the twelve Canadian steel firms tend to specialise in terms of primary steel products. For example, Stelco and Algoma account for most of the plate production; Atlas Steels specialises in the production of stainless steel; and Ipsco concentrates on pipes and tubes. Consequently if the Canadian steel industry is defined in terms of all primary steel products, there is considerable product differentiation. This is particularly the case where machinery is specialised to one product and there is little opportunity for interchangeability.

The marketing of steel gives rise to the provision of a range of services on the part of steel producers, so that service differentiation also undermines the homogeneity of the product, and indicates the nature of and scope for non-price competition in the industry. Service differentiation takes the form of shorter delivery times, continuity of supply, quality of product, credit terms, transportation and availability of metallurgical and consulting services. These services are more readily available to buyers who provide larger orders or who deal with a supplier on a continuing basis. In fact most larger buyers tend to use two sources of supply for any product in order not be be faced with a monopoly situation. However, this is far different from the traditional view of the supply of a homogeneous product coming from a large number of sellers between whom the buyer can choose. The final way in which the homogeneity of the product is undermined is the regional spread of the Canadian industry, such that steel products from Sysco for example cannot compete in markets in British Columbia.

BARRIERS TO ENTRY

The condition of entry into the steel industry will influence the nature and extent of competition in the industry. Entry conditions are largely affected by three sets of factors, the extent of product differentiation, economies of scale, and absolute cost advantages. Product differentiation is often viewed as creating entry barriers for new firms, whereas an industry producing a homogeneous product has lower entry barriers on this score. In the case of the Canadian steel industry, while molten steel is a homogeneous product, steel is sold as primary steel products which are for a variety of reasons differentiated products. This

condition should promote entry barriers. However, product differentiation works both ways, and the ability of firms to differentiate their products permits new entrants to find a corner of the market which they can serve.

> On the other hand, certain spatial pricing systems conducive to strong discipline, notably, nondiscriminatory F.O.B. mill and rigid multiple basing point systems, tend to create market niches luring small-scale entrants. Opportunities for physical differentiation of products have the same effect: new entrants often seek special product line segments, especially those inadequately served by existing sellers, in which they can sustain price premia compensating for the cost penalties of small-scale operation. A frequent concomitant of such niche-filling strategies is building a plant which can be expanded readily once a market beachhead has been secured. The ability of new entrants to build up demand in advance (for instance, by purchasing supplies temporarily from existing manufacturers or importing) facilitates large-scale entry, as does the failure of established sellers to keep pace with growing demand. Finally, the scale at which newcomers enter depends upon such psychological variables as managerial boldness and skill in making credible threats.[2]

This niche-filling strategy characterises many of the seven new firms which entered the Canadian steel industry since the end of World War II, Interprovincial Steel and Pipe Corp. Ltd., Ivaco Industries Ltd., Lake Ontario Steel Co. Ltd., Premier Steel Mills Ltd., Quebec Steel Products Ltd., Western Canada Steel Ltd., and Manitoba Rolling Mills Ltd. Newfoundland Steel Co. also built a plant which subsequently went out of business. Most of the foregoing firms have become acquired by or associated with larger firms or governments.

Economies of scale are an entry barrier if entry at efficient

size (lowest average costs) means that considerable capacity has to be added to an industry, so that the price of the product is likely to be depressed. A study based on 1950s data concluded that for a steel plant including a primary steel mill,

> the smallest efficient size of steel plants was of something over 1 million tons per annum. If it produced both bars, rails, and structural shapes, and flat-rolled products, the smallest efficient size increased to over 2 million tons per annum.[3]

In 1975, Stelco argued that the smallest efficient size of a primary steel mill based on the blast-furnace, oxygen-furnace technique is two million tons per annum, and the preferable size is four to five million tons per annum.[4] Stelco's actual steel output of 5.5 million ingot tons placed it twenty-seventh in terms of steel output of the forty-five member companies of the International Iron and Steel Institute: its 1974 output was 13% that of Nippon Steel of Japan, and 16% that of U.S. Steel Corporation. Obviously, the entry and continuing existence of much smaller firms in the Canadian industry means that the cost disadvantages of smaller scale entry can be overcome. In part this is due to the niche-filling strategy of small firms, the regional nature of the market described above, and the type of technology employed. However, it may also be due to the pricing strategy of the dominant firms which allows the small firms to exist in a segment (regional and product) of the market. In addition, it is not known what cost disadvantages are incurred by operating at less than optimal size, and the economies of scale associated with different products.

> Finally, there is the extremely complex case of the steel industry. Transportation costs are high enough in relation to product value to mandate regional specialization on most ordinary

> steel items, at least in a market as large as the United States. Rolling mills are specialized over limited ranges of products - some, such as continuous hot strip mills, much more narrowly than others, like bar and structural mills. The scale imperatives for efficient production differ widely from product to product. For most products the match between scale requisites and market size is such that rolling mills can be kept busy supplying a relatively small geographic radius, so geographic specialization has been possible.[5]

This view may help to explain the persistence of some medium-size and small-size firms in the Canadian steel industry. It is notable however that although there has been entry, none of the firms have grown to challenge the three dominant firms, and that new entry provides competition for certain products in certain regions only.

Some absolute cost advantages exist for the large firms in that they control or own, either jointly or singly, sources of raw material supply, which may not mean that they obtain the raw material cheaper on a particular day, but does mean that they are assured continuity of supply. For example, it has been noted that in 1974 some of the smaller firms had difficulty in obtaining adequate supplies of iron ore. The ownership characteristics of the Canadian iron ore industry are critical in this connection. A study showed that 70% of Canadian iron ore production is controlled by or affiliated with the large U.S. steel companies.[6] While there has historically been a low level of foreign ownership in the Canadian steel industry, this has not been the case with iron ore. As a result, competing U.S. steel companies have had the ability to control the expansion of Canadian steel companies to the extent that these were dependent on Canadian sources of iron ore.[7] The position of the U.S. steel companies in Canada is

strengthened by the operations of the U.S. ore merchant companies, Pickand's Mather & Co., Cleveland Cliffs Iron Co., and the Hanna Mining Co. These ore merchants are tied closely to the U.S. steel producers and either manage mining ore operations or produce ore under contract to the steel companies. As a result,

> ...the eight largest steel companies which produce approximately 75 per cent of the basic steel produced in the United States together with three major ore merchants account for 98 per cent of the Lake Superior ore shipments, and have an equally powerful position in Canada and Venezuela. In addition, close ties exist between these major steel companies and the ore merchants, including co-ownership of mines, partnership agreements, and substantial equity holdings in these steel companies by the ore merchants.[8]

The consequences of this situation are that the integrated Canadian producers may face barriers to expansion, and new firms may face problems in obtaining access to Canadian sources of iron ore.

The electric furnace process requires different inputs than the other two steel-making processes. The electric furnace process is used exclusively by all the small producers, and by some of the larger firms, in conjunction with the other processes. A major input for the electric furnaces is steel scrap which is generated internally, but also has to be purchased on the open market and some imported from the United States. A substitute for scrap is sponge iron produced by direct reduction of iron ore. Sponge iron production capacity is limited but increasing in Canada. However, the small producers are integrated backwards only to a limited extent at present, and are vulnerable to price fluctuations, and access to supply of scrap iron and steel. Expansion of sponge iron production is constrained by the cost of

energy required in the process. In sum, while the large integrated producers may have a cost advantage by being integrated, their advantage is not directly comparable with smaller firms and potential entrants because of differences in the production process.

A further factor in entry conditions is government involvement in the industry. Sysco and Sidbec are owned by the governments of Nova Scotia and Quebec respectively, and Ipsco is owned by the governments of Saskatchewan and Alberta, 22% each. The provinces of Nova Scotia, Alberta and British Columbia conducted feasibility studies concerning steel production, and the Federal Government, through the Departments of Regional Economic Expansion, Energy, Mines and Resources, and Industry, Trade and Commerce, is considering ways in which it can assist the Canadian steel industry, especially in a regional context. As a result of this activity, government-owned firms possess certain competitive advantages versus other firms. For example, in Quebec, certain government contracts either specify or favour Sidbec-Dosco as the steel supplier, and similar provincial preferences exist in Alberta, Saskatchewan and Nova Scotia. Government funding is available to assist unprofitable operations. In particular, Sysco, while losing money because most sales are made in highly competitive non-North American markets, is able to continue operation because of Federal and Provincial funding, either directly or through Crown Corporations such as Devco. Consequently, entry, actual or potential, involving government-owned or assisted firms represents a different type of entrant, and one which often has special advantages, relative to a new, independent, privately owned firm.

Entry conditions are different again for a firm such as Canadian Pacific, which is involved in the steel industry through

share ownership of Algoma, Western Canada Steel through Cominco, and Manitoba Rolling Mills a division of Dominion Bridge Co., in which Algoma has a substantial interest. This complex represents the possession of considerable knowledge about making and selling steel, and could have a much greater impact on competition as a result of further entry into the industry, than a completely new firm.

British Steel International, a subsidiary of the British Steel Corporation, the U.K. government-owned steel firm, is also involved in the Canadian steel industry. British Steel has 50.2% share ownership in Slater Steel Industries, which owns Burlington Steel (as a division), an interest in Ipsco because Slater Steel owns 20.1% of Ipsco, and a 41.7% interest in the Fire Lake iron ore project in Quebec. British Steel can use its Canadian interests to obtain access to raw materials and to obtain access to Canadian markets. In the United States, access to markets is of particular concern to British Steel as well as to other European steel firms, because exports to the United States face the threat of anti-dumping charges, while sale of steel through owned outlets obviates this problem.

COMPANY MARKET SHARES

The rank position and market shares of the leading steel firms over time give some indication of the extent of competition between these firms, recognising however that they have different product mixes. The steel capacity share of the four leading companies in 1967 and 1976 were:[9]

	1967		1976
Stelco	36%		33%
Algoma	21%		22%
Dofasco	18%		17%
Dosco	10%	Sysco)- Sidbec)	11%
Total	85%		83%

Comparing 1976 with ten years previously there had been no change in the rank position of the four leading firms and an insignificant change in shares of steel capacity. The main difference was the dissolution of Dosco into two provincially-owned corporations. Within the ten-year period, Dofasco had ranked ahead of Algoma for a time.

From 1965 to 1974, Stelco was (and is) the largest steel ingot producer with a production share that ranged between 38% and 42%, and its share of apparent Canadian consumption ranged between 30% and 37%. Over the same period, the share of ingot production of the three largest companies, Stelco, Algoma and Dofasco, ranged between 77% and 83%.[10] Stelco ranked first and either Algoma or Dofasco second: and Stelco's ingot production has been at least 90% of the combined ingot production of the next two largest firms.

INTEGRATION AND DIVERSIFICATION

Vertical integration within the industry has been noted above. The reasons for vertical integration are to reduce costs, and to assure access to raw materials and markets, especially in the face of competing foreign firms which are themselves vertically integrated. In an oligopolistic industry once one firm integrates others tend to follow suit in order to avoid possible foreclosure of markets. As far as iron ore is concerned, Stelco, Dofasco and

Algoma all have equity interests in iron ore producing companies either on their own, in conjunction with each other, or in conjunction with U.S. steel producers.[11]

For the small firms using electric furnaces the ability to integrate backwards into scrap steel markets is limited by the diverse nature of the market. Their strategy appears to be to diversify into direct reduced sponge iron as a substitute for scrap, because of the cost and supply conditions in the scrap market. Sidbec already operates one direct reduction plant and a new facility is nearing completion: Ipsco also has a direct reduction alternative under study. The existence of joint-ventures at the iron ore stage is an element which can help to promote a commonality of interest between firms at all stages of steel production.

The twelve steel companies have a low level of diversification outside their production of steel products. The three major firms can be described as 'dominant verticals' or firms which are large and concentrate on one product (commodity) line. Studies have shown that this type of firm tends to be a poor performer in terms of a number of criteria of performance.[12] Stelco confirms this view.

> The evidence presented...demonstrated that Stelco has been unable throughout the post-war period to effect any redistribution of income in favour of its owners whether calculated in real terms or in terms of current dollars. The fall in return to shareholders has been rapid and persistent. The trend line indicates that it does not matter what point of time one selects, return to shareholders is going down, and in real terms has almost vanished.[13]

A study undertaken for the Estey Report states:

> ...that, in the main, investors in shares of the steel industry would in the last ten years have been little better off than investors in Canada Savings Bonds whose investment was without risk and entirely liquid throughout its terms.[14]

MARKET CONDUCT AND PERFORMANCE

The cyclical nature of the steel industry influences competition within the industry. Although there is little diversification outside of steel, there is a different degree of diversification of primary steel products by firm. One advantage of a firm, such as Stelco, having a wide steel product range is that it can weather cyclical downturns affecting one or two products, whereas a firm tied to one product line has little room to adjust. Stelco notes

> ...we have probably the broadest product range of steel products in North America and as a result of this we are probably less susceptible to fluctuations in the market place than most companies in the sense, that as demand changes, we can shift our production to pick up various products which are then in demand.[15]

Steel product diversity thus gives the larger firms a competitive advantage over medium and small firms. Annual percentage changes in apparent raw steel consumption in Canada from 1964 to 1973 were as follows: +20.5%, +19.9%, -7.7%, -4.7%, +6.7%, +7.4%, +3.5%, +7.7%, +8.6%, +9.3%.[16]

Competition can emanate from new technology with respect to products and processes. In steel-making new technology has developed in recent years with respect to the basic oxygen furnace for making steel, blast furnaces, continuous casting operations, and direct reduction of iron ore. Over time the Canadian industry

has responded and adapted to these developments, and there has been no attempt to suppress technological advances, and no power to do so. The case of the basic oxygen process is of interest. This process was developed by an Austrian steel company, and first used in Canada and North America by Dofasco in 1954. It was not until 1971 that Stelco installed a basic oxygen furnace, and was the last of the three large integrated producers to do so. The new technology was not suppressed, but it is interesting to note that Stelco operated for 17 years before beginning to introduce this markedly superior process for making steel. Either the competitive pressures were not great enough or the cost of replacing old equipment was too high.[17]

The pricing of steel products has been well documented and discussed elsewhere.[18] Stelco is identified as the price leader for most steel products, with its pricing policies subject to international competition, especially from the United States and Japan, to the exchange rate and to the level of Canadian tariffs. The total cost of steel to a customer is a combination of the 'Base Price', or f.o.b. mill price, 'Extras' or charges made for special quality or quantity characteristics of an order, and 'Freight', or the cost of transportation from the steel mill to the customer. Electric furnace steel-makers at times add a surcharge which varies with the price of scrap.

Each major steel producer has its natural market, e.g., Hamilton-Toronto for Stelco and Dofasco, and western Ontario for Algoma. If Algoma and Stelco have the same 'Base Price' for a product, Algoma has to absorb the freight costs from Sault Ste. Marie to Hamilton to sell in the Hamilton area in competition with Stelco and Dofasco. Similarly, Stelco has to absorb freight costs from Hamilton to Sault Ste. Marie in order to compete with Algoma in Sault Ste. Marie. Further west, Algoma would appear

to have an advantage over Stelco, except that Stelco has facilities in Alberta, through its acquisition of Premier Steel. In general, the extent of competition will vary by product because even the majors do not compete with a similar range of steel products. Ipsco uses as its 'Base Price' the Algoma 'Base Price' plus transportation from Sault Ste. Marie to Regina, so that Regina becomes a basing point for Ipsco's product range. The customer pays the Regina 'Base Price' plus freight from Regina to his location, even if this is, for example, Winnipeg.

The system of 'Base Price' setting at individual mills (f.o.b. pricing) tends to establish local monopolies around the location of the mill. The system of basing-point pricing, whereby, each mill charges the same 'Base Price' for a product, reinforces local monopolies and reduces the opportunity for price competition to occur unless firms engage in freight absorption. Only if there is a single basing point for a product plus an agreement on how costs will be calculated from the basing point to any customer, can price competition, other than through cheating, be eliminated in all domestic markets.

Price competition from imported steel products comes mainly from the United States and Japan, the latter especially in British Columbia, with probable increasing imports coming from European steel producers. Import competition limits the 'Base Prices' which Stelco can set for many steel products, although Canadian tariffs provide some protection from import competition. The following example illustrates the relationship of U.S. and Canadian prices for Steel Plate, Carbon since 1955:[19]

Steel Plate, Carbon	1955	1959	1963	1967	Dec. 1969	Jan. 1972	Oct. 1974
U.S. - Pittsburgh, Pa. (U.S.$)	4.15	5.30	5.30	5.55	6.45	8.15	11.85
U.S. (Can.$)	4.01	5.11	5.69	6.02	6.94	8.21	11.65
Canada - Hamilton (Can.$)	4.95	5.45	5.45	5.45	5.85	6.55	8.95

Adding the 10% tariff results in a steel customer in Hamilton in 1974 paying $8.95 for steel from Stelco compared to $12.82 plus freight from Pittsburgh to Hamilton for steel imported from a U.S. producer. The potential of import competition is noted by the fact that Sysco mainly sells in the export market, outside of North America, and is experiencing continuing losses because of the prices it receives. Similarly, Western Canada Steel sells in competition with Japanese steel imports and is suspected to be losing money.

In 1974, the Estey Report noted some movement away from strict price leadership by Stelco, as 'Base Price' divergencies showed up.[20] More recently, price increases with respect to bar products strongly suggest the role of Stelco as a price leader with the other producers following suit.[21] The desire for orderly pricing is especially characteristic of an industry such as steel in which fixed costs are a high percentage of total costs. To-date, the Canadian steel industry has managed to operate at a high percentage of capacity utilization, so that there has been stability of output relative to capacity as well as reasonable price stability. A concern for not upsetting the market by excessive entry has been noted in a study of the steel industry in several developed countries including Canada.

> And in a number of cases where the amount of additional demand a firm could expect to capture over the coming several years was considerably less than the size of an optimal capacity increment, all else (such as equipment retirements)

> taken into account, producers made deliberate decisions to accept higher unit costs by building sub MOS blast furnaces, oxygen converters, and rolling mills and by expanding rolling mill capacity through the cost expedient of installing an additional stand every one to three years. Such behavior was most clearly apparent in the small Swedish and Canadian markets, but it also occurred in attentuated form even in the huge United States markets.[22]

The concern for orderly marketing has been an on-going one for the major Canadian steel producers both in their relationships with other steel producers and with Steel Service Centres, most of which are small and import steel. The concept of orderly marketing has been described by the executive director of the U.S. Federal Trade Commission as follows:

> In Washington one repeatedly hears the call for 'orderly markets' to promote competition. Just what is an orderly market? It seems to be defined as one that has no corporate losers - only winners.[23]

The larger and more sophisticated (e.g., pre-production processing operations) Steel Service Centres do compete with steel producers, with steel supplied both from Canadian and foreign sources. Reciprocity is one of the elements of the industrial marketing process. This is evidenced in intermill exchanges and in the buying and selling relationships with firms such as Steel Service Centres.

Major inputs for steel-making come from company-owned properties in the case of iron ore, coal and limestone for the integrated companies and from open-market transactions for some coal, tin, zinc, and steel scrap. In terms of energy requirements for natural gas, electricity, and oil, prices tend to be government controlled, as is the case for freight costs (rail and highway).

Profit margins in the Canadian steel industry have been found "not to be unusually high" in a number of recent studies.[24] In fact, Stelco shows a severe downward trend for the rate of return on its common shares from 1951 to 1974. This indicator on its own does not signify increasing competition since one of the ways a monopolist or oligopolist may behave is to live a long and quiet life, rather than aim for a maximum return on investment in the short run.

NOTES TO CHAPTER 1

COMPETITIVE ASPECTS OF CORPORATE DUALISM

1. R.T. Averitt, The Dual Economy (New York: Norton, 1968), p. 2.

2. These issues are discussed in Department of Consumer and Corporate Affairs, Proposals for a New Competitive Policy for Canada, First Stage, (Ottawa, Information Canada, 1973), pp. 42-53; and in L.A. Skeoch, et.al., Dynamic Change and Accountability in a Canadian Market Economy, (Ottawa, Department of Consumer and Corporate Affairs, 1976), Part III.

3. L. Telser, "Why Manufacturers Want Fair Trade", Journal of Law and Economics, Vol. 3, Oct. 1960, p. 86.

4. C. Kaysen, "The Corporation: How Much Power? What Scope?, in E.S. Mason, ed., The Corporation in Modern Society (Harvard University Press, 1960), p. 97.

5. R.T. Averitt, The Dual Economy (New York: Norton, 1968); S.A. Broadbridge, Industrial Dualism in Japan: A Problem of Economic Growth and Structural Change (Chicago: Aldine, 1960); J.K. Galbraith, Economics and the Public Purpose (Boston: Houghton, 1973); J.B. Herendeen, Economics of the Corporate Economy (New York: Dunellen, 1975); A. Lindbeck, Swedish Economic Policy (Berkeley: University of California, 1974); Report of the Committee of Inquiry on Small Firms, Small Firms (London: HMSO, 1972); J.R. Davis and M. Kelly, Small Firms in the Manufacturing Sector (Research Report No. 3 for the main Report), and Merrett Cyriax Associates, Dynamics of Small Firms (Research Report No. 12 for the main Report); A.A. Thompson, Economies of the Firm (Englewood Cliffs, N.J.: Prentice Hall, 1973).

6. P.G. Schrag, Counsel for the Deceived (New York: Pantheon Books, 1972).

7. See A.D. Neale, The Antitrust Laws of the U.S.A. (Cambridge, U.K.: University Press, 1960), pp. 138-143.

8. Restrictive Trade Practices Commission Report, A Study of Certain Discriminatory Pricing Practices in the Grocery Trade, (Ottawa: Department of Justice, 1968), p. 194.

9. R. v. Eddy Match Company Ltd., et. al., October 29, 1951.

10. Director of Investigation and Research, Combines Investigation Act, The Distribution and Sale of Automotive Oils, Greases, Anti-Freeze, Additives, Tires, Batteries, Accessories and Related Products (Ottawa: Queen's Printer, 1960).

NOTES TO CHAPTER 2

CORPORATE DUALISM IN THE CANADIAN STEEL INDUSTRY

1. Sponge iron is iron ore reduced in the solid state, which still contains the impurities, and which has approximately 90% iron content.

2. Submission of the Steel Company of Canada, Limited, to the Royal Commission on Corporate Concentration, No. 1975, pp. 52-67.

3. The Canadian iron ore industry is 77% U.S.-owned and 22% Canadian-owned.

4. Frederick M. Eaton, "Joint Ventures", Antitrust Law Symposium, Proceedings of the Fourth Annual Meeting, Section on Antitrust Law, New York Bar Association (New York: Commerce Clearing House, 1952), p. 137.

5. Daniel R. Fusfeld, "Joint Subsidiaries in the Iron and Steel Industry", American Economic Review, May 1958, p. 586. Canadian steel producers also obtain coal and ore from a variety of sources which are not common to the companies.

6. Stelco submission, op. cit., pp. 121-122.

7. Ibid., p. 122.

8. Ibid., p. 121.

9. Based on a variety of sources of information, e.g., Financial Post Survey of Industrials, Trade Index, etc.

10. T.K. Salman, Canadian Pacific Investments Ltd. (Ottawa: Royal Commission on Corporate Concentration, 1976), p. 69.

11. Ibid., p. 4.

12. Dofasco and Stelco have a 50/50 joint venture, Baycoat Limited, which produces prepainted galvanized and cold rolled steel.

13. Trade Liberalization and the Canadian Steel Industry (Montreal: Private Planning Association, 1969), p. 6.

14. Stelco submission, op. cit., p. 60.

15. Ibid., p. 67.

16. Until 1974, the Government of Alberta owned about 22% of Ipsco directly. In 1975, the Government of Alberta set up Steel Alberta, which is owned 50% by Alberta Energy and 50% by Alberta Gas and Trunk Line Company. The latter is a privately owned company but Alberta Energy is 50% owned by the Government of Alberta. Thus indirectly 25% of Steel Alberta is owned by the Government of Alberta.

17. Sidbec will be completely vertically integrated in 1977.

18. "Auditor reports Sysco Management fails in Leadership", Globe & Mail, March 11, 1975.

19. Ibid.

20. Ralph Surette, "Steel Industry Nears Collapse", Last Post, Vol. 5, No. 2, December 1975, p. 14.

21. Linden MacIntyre, "Sydney Steel Hope", Financial Times, January 12, 1976.

22. Sidbec-Dosco's chairman, Jean-Paul Gignac, "said last December (1975) that the company could lose between $10 million and $20 million in 1975 - its fifth loss in seven years of operation. Sales declined 20 per cent in 1975 from $210 million in 1974, when profit was $10.4 million". See Globe & Mail, Update, August 14, 1976, p. B4.

23. A. Vanterpool, "Iron, Coal and Steel in Western Canada", paper presented at the Annual Meeting of the Canadian Institute of Metallurgy, Edmonton, August 25th, 1975, p. 8.

24. Ibid.

25. Hon. Kim Thorson, "Plans for expansion of the Steel Industry in Saskatchewan", Western Miner, June 1975, p.22.

26. "Plans for Steel Mill in West still uncertain", The Financial Post, September 18, 1976, p. J-3.

27. Financial Post, October 2, 1976, p. 7. Stelco has received no government grants for the Nanticoke Project.

28 R.M. Blough, The Washington Embrace of Business (New York: Columbia University Press, 1975), p. 22.

29. Jacques Singer notes that the rolling mill products of the "western plants reflect mainly the composition of regional demand--merchant bars, reinforcing bars, light structurals, rods, and in the case of Interprovincial Steel and Pipe, plate, skelp, and hot rolled sheets and coils". Trade Liberalization and the Canadian Steel Industry, p. 8.

30. T.K. Salman, op. cit., p. 69.

31. Memorandum dated October 1975, pp. 27-28.

NOTES TO CHAPTER 3

CORPORATE DUALISM AND COMPETITION IN THE CANADIAN STEEL INDUSTRY

1. Stelco submission, op. cit., p. 9.

2. F.M. Scherer, et.al., The Economics of Multi-Plant Operation (Cambridge: Harvard University Press, 1975), pp. 153-154.

3. H.C. Eastman and S. Stykolt, The Tariff and Competition in Canada (Toronto: MacMillan, 1967), p. 340.

4. Stelco submission, op. cit., p. 8.

5. Scherer, op. cit., p. 306.

6. G. Bava, "The Concentrated Control of Iron Ore by Major Steel Companies as an Unfair Method of Competition", Southern California Law Review, Vol. 46, 1973, p. 1123.

7. To-date this dependency has not existed because of the availability of ore from Canadian or non-Canadian sources.

8. Ibid., pp. 1130-1131.

9. See J. Singer, Trade Liberalization and the Canadian Steel Industry (Montreal: Private Planning Association, 1969), p. 8 for 1967; and Table 1, this study for 1976.

10. Stelco submission, op. cit., pp. 6 and 21.

11. The Canadian iron ore industry is 77% U.S.-owned and 22% Canadian owned.

12. B.R. Scott, "The Industrial State: Old Myths and New Realities", Harvard Business Review, Vol. 52, Jan.-Feb. 1974, pp. 133-148.

13. Stelco submission, op. cit., p. 29.

14. Steel Profits Inquiry (Ottawa: Information Canada, Oct. 1974), p. 152.

15. Transcript of Stelco's appearance before Royal Commission on Corporate Concentration, Toronto, January 14, 1976, p. 2491.

16. Steel Profits Inquiry, op. cit., p. 134.

17. Stelco states that it delayed installing BOF furnaces because it believed that development work with oxygen injection and dual hearths would maintain the competitive position of the open hearth furnace.

18. Steel Profits Inquity, op. cit., pp. 31 and 47; Stelco submission, op. cit., pp. 57 and 66; J. Singer, op. cit., pp. 29-50.

19. Steel Profits Inquiry, op. cit., pp. 147 and 148.

20. Ibid., p. 32.

21. Wall St. Journal, July 6, 1976, p. 3, and Globe & Mail, August 10, 1976, p. B1.

22. F.M. Scherer, op. cit., p. 145.

23. R.T. McNamara, "Regulation Versus Competition", Wall Street Journal, Aug. 9, 1976, p. 8.

24. Steel Profits Inquiry, op. cit., p. 43. This study deals with the profit performance of the Canadian steel industry in-depth.